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The Arabic Verb:
Root and stem and their contribution to verb meaning

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The Arabic Verb:

Root and stem and their contribution to verb meaning

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Dedication

For Chelsea, Ruby and Albert.

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The Arabic Verb:

Root and stem and their contribution to verb meaning

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This dissertation is a study of the construction of meaning below the word level, specifically how roots and morphemes combine to create verbs, and the contribution of each to the meaning that a verb construes. It uses data from the verb system of Modern Standard Arabic to bring together the theory that roots combine with different structures to produce verbs describing different types of event, and the observation that many roots cannot form verbs on their own, and must combine with other morphemes do to so. The thesis is that Arabic roots lexicalize events, states or things, but remain free to create new meaning in combination with the different verb stems of Arabic, each of which contains one or more morphemes that determine the type of event that a root may come to describe. The findings are that the morphemes present in the different verb stems of Arabic condition verb meaning in four main ways: through reflexivization; through providing an Actor subject argument; through marking plural event phases; and through marking the presence of two relations construed as one event. A root combines with a morpheme that determines the type of event that a verb may describe, and it contributes meaning within the limits set by that morpheme. Thus morphemes do not modify a fixed concept, but root and morpheme create verb meaning together. The implication of this for a theory of meaning below the word level is that the semantic concepts which humans communicate remain relatively constant, but they are expressed at different levels of granularity: at the root level; by combining roots below the word level; by combining

roots with morphemes below the word level; and by combining words at the clause level. This opens up avenues for further research to establish the differences, if any, between the meanings construed at these different levels of granularity.

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Chapter 1: Introduction

1.1 Root and structure

Much current theory on the construction of verb meaning makes a distinction between two components which come together to create a verb: the root, and the structure which houses it (Grimshaw 2005, Pesetsky 1995, Marantz 1997, Rappaport Hovav and Levin 1998). However, little work has been undertaken to shed light on the way in which the components of a verb interact to create meaning below the word level, that is, to investigate what a root contributes to the meaning of a word, and how that contribution is determined or shaped by the other elements with which the root combines. As a result, the questions below remain largely unanswered.

(1) What is a root?
(2) What is its role in building verb meaning?

There appear to be two philosophies regarding the building of verb meaning in English. The first, exemplified by Rappaport Hovav and Levin (1998), views roots as contributing meaning to different structures which encode different types of event, so that the root √BREAK, for example, merges with a certain type of structure to produce a transitive verb, while a root like √DECAY merges with a different type of structure to form an intransitive verb. The second philosophy, perhaps best developed by Marantz (1997, 2000), recognizes that many roots merge with morphemes to create meaning. This approach views a verb like *destroy* as containing the root √STROY, which combines with the bound morpheme *de-* to form a verb. Thus whereas one approach is concerned primarily with the role of a root in creating verbs describing different types of event, the other recognizes that a root may not be able to express anything on its own, and must combine with other morphemes to create a verb conveying a complete and coherent semantic concept.

In this dissertation I bring these two equally valid approaches together. I undertake an analysis of root and stem morphology in the verb system of Modern Standard Arabic, focusing on the contribution of both root and bound morpheme to verb meaning, and illustrating that the

function of these morphemes is to determine the type of event that a verb describes. My thesis is that roots may lexicalize events, states or things, but that they remain free to create new meaning in combination with the different verb stems of Arabic. A stem is a pattern or template, which contains one or more morphemes that determine the type of event that a root may come to describe. The morphemes present in the different verb stems of Arabic condition verb meaning in four main ways: through reflexivization; through providing an Actor subject argument; through marking plural event phases; and through marking the presence of two relations construed as one event.

When a root combines with a reflexive marker, the verb created describes what I term an internally-oriented event which begins with one event participant and ends with that same participant (after Kemmer, 1993). This type of internally-oriented event includes, but is not limited to, changes of state, internal mental processes, events of acquisition, and events in which an entity is viewed as divided against itself. Reflexive markers are present in a number of verb stems, and always produce verbs describing such internally-oriented events.

Two verb stems provide the root with an Actor subject argument. A root which does not lexicalize an event may combine with these stems to produce a verb with an Actor subject, which may be viewed as bringing an event about. The type of event described by such verbs includes externally-oriented events in which one participant causes another to act or undergo a change; events of doing, where a root that lexicalizes a permanent property such as *good* or *long* contributes this meaning to describe the way in which something is done (do something *well*, do it for a *long* time, etc.); events of externally-oriented production (*raining*, *flowering*, *fruiting*); and events of caused transfer (*giving* and *sending*). Roots that do not lexicalize such events combine with the Actor subject provided by the stem to produce verbs that construe concepts that the root alone cannot.

There are two separate morphemes in the verb system of Arabic that specify number. The first of these is a pluractional marker that creates a verb describing an event consisting of multiple phases. When a root combines with this morpheme, it contributes some aspect of its meaning to describe events consisting of multiple actions (*chop up*); events of scalar change (*improve*); and events of expansion of over space (*explode*). The second morpheme that specifies number is a dual marker that signifies the presence of two relations that are conceptualized and construed as one event. Roots combine with this morpheme to create verbs with subjects that

represent the beginning of one of these relations, and the end of the other. The type of event described by such verbs includes events of coaction (*cohabit*); interaction (*correspond*); competition (*vie*); and opposition (*struggle*).

For every verb stem that contains morphemes contributing an Actor subject, plurality, or duality to the meaning of a verb, there is a corresponding stem that contains one of these morphemes plus a reflexive affix. This may lead to the mistaken assumption that a verb formed in one of these stems is reflexivized in the other. This possibility is easily disproved by the fact that a large number of roots may produce a verb in a reflexive stem, but not in its non-reflexivized counterpart. For example, the root √ḥkr produces the stem VIII verb *ʔiḥtakara* 'to monopolize', which contains a reflexive affix, but this root does not produce any other 'non-reflexive' verbs. Likewise, the root √lḥy produces the stem I verb *laḥaa* 'to insult', and the stem VIII verb *ʔiltaḥaa* 'to grow a beard'. While this second verb contains a reflexive morpheme, it would ludicrous to suggest that one verb is derived from the other. In my analysis therefore I follow Doron (2003a, 2003b) who, in her study of the verb system of Hebrew, views verbs as root-derived. For Arabic, I assert that all verbs are created when a root combines directly with one or more morphemes, where it contributes some aspect of its abstract meaning in reaction to the meaning contributed by the morpheme in question.

This approach combines the two philosophies of verb meaning noted in the introductory paragraph above by recognizing firstly that roots contribute meaning to structures that encode different kinds of events, and secondly that the meaning that a root contributes is not always enough to produce a linguistic representation of a given event. If an Arabic root does not lexicalize an internally-oriented event, or a caused event, or an event consisting of plural phases, or an event in which there are two relations, it must combine with a morpheme that contributes this information. Thus roots and morphemes combine to produce verbs that construe different event types. In making this argument, I offer answers to the questions posed above regarding the nature of a root and its role in building verb meaning, showing firstly that a root may lexicalize a given concept while remaining free to contribute other aspects of its meaning to a verb, and secondly how the type of event that this new verb will describe is determined by the interaction of the root with the other morphemes the verb contains.

1.2 OUTLINE OF THE DISSERTATION

The dissertation is divided into four parts. In this first part on the root and verb meaning I present data from Arabic (in chapter 2) to give an idea of how the root and stem system works. I then present a review of current theory on verb meaning, applying relevant aspects to Arabic in the process, before outlining some basic assumptions that I make in my approach. The thesis that I present in this dissertation is that the Arabic root interacts with different morphemes which specify the event type the resulting verb may describe. These morphemes achieve this through reflexivization, through providing an Actor argument, and through specifying number, in the form of plural event phases or dual relations. Each part of the dissertation is devoted to one of these areas. Part two is on reflexivization. In chapters 3 and 4 I examine stems VII and VIII, which both contain reflexive morphemes. I show that the combination of a root with a reflexive morpheme creates a verb describing an internally-oriented event, in which the subject of the verbs stands in a relation with itself. However, reflexivization within a verb is not reflexivation *of* something. That is, while it may be the case that a reflexive morpheme combines with a root that lexicalizes two participant roles to produce a verb in which these roles are both filled by the same participant, this is the result of the larger function of reflexivization, which is to code linguistically the fact that the same entity represents the Initiator and Endpoint of an event (the terminology is Kemmer's, 1993). Roots that lexicalize events like caused changes of state, which begin and end with separate event participants, happen to produce intransitive verbs when they combine with a reflexive affix, but the same is true of roots that do not lexicalize such two-participant events. This is because the function of the reflexive affix is not to reflexivize participant roles which are present in the root, but to bring two reflexivized participant roles with it to any structure in which it appears, in order to code the fact that the subject of the verb stands in a relation that begins and ends with itself. This same function produces anticausative verbs (primarily in stem VII) and middle verbs (primarily in stem VIII), and it is the nature of the root that determines whether the verb is anticausative or middle.

Part three deals with the combination of a root with an Actor argument. In chapter 5 I argue that stem IV provides an Actor argument which allows different types of root to create different types of active verb. An Actor argument has the potential to *cause* something, *do* something, *produce* something, *go* somewhere, or undertake any number of activities. It incorporates all of these possibilities, and it is the nature of the root that determines which of

them is attributed to the Actor argument in a given verb. When a root contributes a thing, like *rain*, the Actor produces rain. When the root contributes a place name, the Actor goes to that place. When the root contributes an event like *die*, the Actor causes another event participant to die. The combination of a root with an Actor argument also creates new meanings not so easily recognizable in other manifestations of that root. For example, the root √qdm produces the adjective *qaduum* 'bold', but when combined with an Actor argument and a preposition this same root yields the verb *ʔaqdama ʔala* 'to embark upon'. Thus the stem contains a morpheme that represents an Actor subject, and the root combines with this to specify exactly what the action undertaken by that subject will be.

In chapter 6 I examine the types of verb created when a root combines with an Actor argument and a reflexive affix in stem X. Verbs created in this stem typically describe internally-oriented events in which an active subject stands in a relation to another event participant, but this relation loops back to the active subject. It is this 'looping back' which is specified by the reflexive affix. Such events include actions like *using*, where the subject acts on something and benefits from that action, caused mental states like *to enchant*, which are both caused by and aimed at the subject; asking for things (like help or an explanation); events of taking possession, such as *annexing*; and mental events like *consider strange*; where the subject directs his or her attention towards another event participant, and then formulates an impression based on what he or she sees or experiences. Thus although some of these events involve the outward projection of energy from one participant to another, they remain internally-oriented because the event then continues, ending with the participant with which it begins.

Part four of the dissertation concentrates on the interaction between roots and morphemes that specify number. In chapter 7 I argue that stem II consists of both an Actor argument and a pluractional marker which yields verbs describing events that consist of multiple phases. An event phase has a temporal or spatial bound, and it is the presence of this bound which enables the separation of one event phase from another. The pluractional morpheme present in stem II signals that the event described by a given verb consists of phases, and the root contributes some aspect of its meaning to specify the characteristics of each phase. Roots that lexicalize singular telic events like *cut* usually produce verbs like *cut up,* in which each phase is equal to one instance of this telic event. This is not always the case however, and a number of roots produce pluractional verbs in stem II despite the fact that they do not yield a telic verb in

any other stem. This is further proof that a root combines directly with the pluractional morpheme to create a verb, rather than forming a 'base verb' to which the pluractional morpheme then attaches.

In chapter 8 I discuss the types of verb created when a root combines with both a pluractional morpheme and a reflexive affix. These include verbs of internal decomposition, like *disintegrate*, verbs in which the subject is distributed over space, like *expand*, or concentrated in one location, like *contract*, and verbs of incremental mental processes like *get to know*, or *come to accept*, where the subject enters an endstate by degree.

In chapters 9 and 10 I argue that another morpheme specifies what I define as duality, which refers to an event type in which two relations are lumped together and construed as one event. Chapter 9 deals with stem III verbs that are created when a root merges with this dual marker. I present data to illustrate that a set of stem III verbs share in common the fact that their subjects represent the beginning of one relation and the terminus of another. The event described has a symmetrical flavour, but is construed as asymmetrical because the second event participant (which stands at either end of the two relations that begin and end with the subject) is either realized as the object of the verb, or is left implicit. In either case, it is not presented as equal to the subject. In making my argument I rely on Talmy's (1985) theory of force dynamics to explain the concept encoded by verbs like stem III *ṣaaraʕa* 'to struggle', where the subject of the verb exerts force towards an implicit event participant, which exerts an opposing force to towards the subject.

In chapter 10 I discuss the type of verb created when a root combines with a dual marker and a reflexive affix. These morphemes between them create a verb which construes two relations, where the participant roles at either end of both relations are filled by the same entity. Thus the subject stands in two relations to itself. The meaning contributed by the root to such a verb determines whether the verb will describe a reciprocal event such as *fight each other* in which two participants act on each other; an event like *pass down to each other* in which elements of the subject act in succession, or a collective event like *flock*, where each element of the subject acts in conjunction with every other element.

I end the dissertation in chapter 11 by summarizing the main points made, by considering the implications of the analysis that I have put forward both for Arabic and Semitic studies, and

for the development of a theory of verb meaning in linguistics in general. I offer suggestions for further research in both areas.

Chapter 2: Theoretical Preliminaries

2.1 Goal of the chapter

My goal in this chapter is to outline how the root and stem system works in Arabic, and to establish some important theoretical concepts which I will rely upon in the coming chapters. I begin the chapter by presenting data to illustrate the different types of verb stem that exist in Arabic, and to show how the meaning that a single root produces varies as it enters into combination with each stem. I then move on to discuss current theories of the root. In doing so I situate this dissertation in the larger context of current thinking on verb meaning in linguistics generally. I then outline the approach that I take in my analysis, before presenting data to illustrate the types of verb that are produced in the first Arabic verb stem (stem I). I argue that this type of verb represents just one manifestation of the root, and should not be equated with the root itself. I finish the chapter by summarizing the main points made.

2.2 The Arabic verb

The Arabic verb is formed through the combination of a three-consonant root with a morphological template, which I refer to as a verb stem, following the convention established in Semitic studies. Verbs may also be formed from roots consisting of four consonants, but these do not enter into combination with verb stems to the same degree as three-consonant roots, and are not therefore the primary focus of this dissertation. Of the fifteen different verb stems attested in the verbal system, nine are common in Modern Standard Arabic, and I restrict my analysis to these. The stems are numbered in Arabic-English dictionaries, and I adopt this Western system of numbering to identify each stem. Traditionally, the stems are held to augment 'the meaning' of the root in various ways. The table below summarizes the analysis put forward by Holes (2004), in which he views stem I as producing unaugmented verbs, and the other stems as modifying root meaning (p. 101-105).

Stem	Pattern	Function	Examples
Stem II	$C_1aC_2C_2aC_3$	Intensive or extensive	I: ʤamaʕa 'to collect' trns II: ʤammaʕa 'to amass' trns
		Causative	I: qadima 'to precede; go before' int II: qaddama 'to put forward' trns
		Estimative	I: ṣadaqa 'to be truthful' int II: ṣaddaqa 'to believe' trns (ascribe truth to)
		Denominative (like English *–ize*)	I: ʕaqama 'to be sterile' int II: ʕaqqama 'to sterilize' trns
Stem III	$C_1aaC_2aC_3$	Conative (making of effort to achieve stem I meaning	I: qatala 'to kill' trns III: qaatala 'to try to kill; to fight' trns
		Implied patient involved in the action	I: kataba 'to write' int/trns III: kaataba 'to correspond with' trns
Stem IV	$ʔaC_1C_2aC_3$	Causative	I: fariḥa 'to be happy' int IV: ʔafraḥa 'to gladden' trns
		Factitive	I: nazila 'to go down' int IV: ʔanzala 'to bring down' trns
		Inchoative denominative	waraqa 'leaf' IV: ʔawraqa 'to burst into leaf' int
Stem V	$taC_1aC_2C_2aC_3$	Effective counterpart of stem II - effect of action is on the subject	II: ʕallama 'to teach' trns V: taʕallama 'to learn' trns
		Reflexive	II: ʤammaʕa 'to amass' trns V: taʤammaʕa 'to come together in masses' int

Table 1: Summary of Holes' (2004) analysis of the verb stems of Arabic.

Stem	Pattern	Function	Examples
Stem VI	$taC_1aaC_2aC_3$	Reciprocal counterpart of stem III	III: waafaqa ‘to agree to a proposition’ obl VI: tawaafaqa ‘to come to an agreement’ int/obl
		Stative relationships between component parts	I: masaka ‘to hold’ trns VI: tamaasaka ‘to cohere’ int
		Iterative or continuous	I: saqaṭa ‘to fall’ int VI: tasaaqaṭa ‘to fall continuously’ int (said of rain; missles etc.)
		Simulative	I: ʤahila ‘to be ignorant; not know’ int/trns VI: taʤaahala ‘to feign ignorance (of)’ int/trns
Stem VII	$ʔinC_1aC_2aC_3$	Passive (focusses on effect of action without existence of causative agent)	I: ḥalla ‘to undo; solve’ trns VII: ʔinḥalla ‘to be untied; dissolved’ int
		Reflexive	I: saḥaba ‘to pull; withdraw’ trns VII: ʔinsaḥaba ‘to withdraw’ int
Stem VIII	$ʔiC_1taC_2aC_3$	Reflexive	I: naqala ‘to move’ trns VIII: ʔintaqala ‘to move oneself’ int
		Benefactive	I: kasaba ‘to gain’ trns VIII: ʔiktasaba ‘to earn’ trns (gain for oneself)
Stem X	$ʔistaC_1C_2aC_3$	Reflexive correlate of stem IV	IV: ʔaʕadda ‘to prepare’ trns X: ʔistaʕadda ‘to prepare oneself’ trns
		Benefactive	IV: ʔaʕmala ‘to cause to work’ trns X: ʔistaʕmala ‘to use’ trns (cause to work for ones benefit)
		Estimative	I: ḥasuna ‘to be good’ int X: ʔistaḥsana ‘to approve’ trns
		Eductive (seeking)	I: ǧafara ‘to pardon’ trns X: ʔistaǧfara ‘to ask for pardon’ trns

Table 1, cont.

Event nominals are formed in nominal templates which encorporate the morphemes of a given verb, and which preserve its argument structure. An event nominal which appears to be formed from, or at least related to, a verb is termed a *maṣdar* 'source'. There are numerous templates for the maṣdar of a stem I verb (although a given stem I verb will usually only have one of these), but all other stems have a corresponding maṣdar pattern. For example, the maṣdar of stem VIII is formed in the pattern ʔiC$_1$tiC$_2$aaC$_3$. The root √nql combines with stem VIII to produce intransitive *ʔintaqala* 'to move (to)'. The /t/ morpheme here is not part of the root, and it appears again in the corresponding maṣdar *ʔintiqaal* 'moving; transition'. This maṣdar may itself be the base for an adjective, formed through the affixation of the adjectival morpheme *–iyy* to produce *ʔintiqaaliyy* 'transitional'. Thus while I will argue that most (if not all) Arabic verbs are root-derived, there are mechanisms in Arabic for deriving words from other words, a point I will return to shortly.

Holes' analysis (outlined in the table above) provides a good overview of the types of verb produced in each verb stem, but if offers little explanation as to why certain meanings are produced in one stem rather than another. Further, the meanings that he attributes to certain verbs are not always accurate. For example, stem III *qaatala* can never mean 'try to kill', just as stem VIII *ʔintaqala* is more accurately translated as intransitive *move*, rather than transitive *move oneself*. Nevertheless, the table above illustrates Arabic root and stem morphology in action, and illustrates how, in order to form a verb, a root enters into combination with at least one of these numbered stems.

Some roots may combine with only one stem, and others with more than one. I will refer to the possible combinations of root and verb stem that a given root permits as a verbal paradigm. Following Pesetsky (1995), I use the root symbol √ to identify a root (as opposed to the verbal or nominal manifestation of that root). To illustrate, the verbal paradigms for the roots √qṭʕ, √wrθ and √ʕwn are given below. All verb forms are third masculine singular perfective, following the convention followed in Arabic linguistics.

√qṭʕ →	I.	**q**aṭa**ʕ**a	‘to cut’ trns
	II.	**q**aṭṭa**ʕ**a	‘to chop up’ trns
	III.	**q**aaṭa**ʕ**a	‘to interrupt; to boycott’ trns
	IV.	ʔa**q**ṭa**ʕ**a	‘to give someone a piece of land’ ditrns
	V.	ta**q**aṭṭa**ʕ**a	‘to break up; cut in and out’ int
	VI.	ta**q**aaṭa**ʕ**a	‘to intersect’ int/obl
	VII.	ʔin**q**aṭa**ʕ**a	‘to cut out/off’ int
	VIII.	ʔi**q**taṭa**ʕ**a	‘to cut oneself a piece; to glean’ trns
	X.	ʔista**q**ṭa**ʕ**a	‘to deduct’ trns
√wrθ →	I.	**w**a**r**i**θ**a	‘to inherit’ trns
	II.	**w**a**rr**a**θ**a	‘to bequest (someone) (something)’ ditrns
	VI.	ta**w**aa**r**a**θ**a	‘to pass down through the generations’ trns
√ʕwn →	III.	**ʕ**aa**w**a**n**a	‘to help’ trns
	IV.	ʔa**ʕaan**a	‘to help’ trns
	VI.	ta**ʕ**aa**w**a**n**a	‘to cooperate’ obl
	X.	ʔista**ʕaan**a	‘to get help from someone’ obl

Figure 1: Verbal paradigms for the roots √qtʕ, √wrθ and √ʕwn.

These verbal paradigms show that multiple verbs may be formed from the same set of three consonants, and that these verbs share some kind of semantic connection. They also illustrate two important points, the first of which is that the function of the verb stems is not consistent, and depends on the nature of the root. Stem II, for example, produces an iterative verb from √qṭʕ, *qaṭṭaʕa* ‘to chop up’, but a causative verb from √wrθ, *warraθa* which may be translated as ‘cause to inherit’. Likewise, stem VI yields a reciprocal verb from √qṭʕ, *taqaaṭaʕa* ‘to intersect’, but a different type of reciprocal from √wrθ, which combines with that stem to produce transitive *tawaaraθa* ‘to pass down’, where the one element of the subject passes down the object to another element of the subject, and this is repeated over and over. Any account of these verb stems will need to explain this apparent variation in function.

The second point concerns the root. The traditional view, put forward by early grammarians of Arabic, but less widely held today, is that the root has one true meaning seen in stem I, and that all other verbs are derived from this original meaning. There clearly is a relationship between a stem I verb like *qaṭaʕa* 'to cut' and the iterative stem II verb *qaṭṭaʕa* 'to chop up', and between these verbs and their intransitive counterparts *ʔinqaṭaʕa* 'to cut out; to cease', said of things like electricity, relationships and the like, and *taqaṭṭaʕa* 'to cut in and out', said of things like voices, telephone lines, internet connections and so on. However, the relationship between stem I *qaṭaʕa* 'to cut', and stem IV *ʔaqṭaʕa* 'to give a piece of land', is not so clear, and this latter verb is more obviously related to the noun *quṭʕa* 'a plot of land' than to the stem I verb. Thus although all the verbs in a verbal paradigm are formed from the same root, it does not follow that they are all derived from a single concept, or at least not one that can be seen in any of these verbalizations. Further, even in instances when there does seem to be a common underlying concept, it does not follow that this is expressed in stem I. The verbal paradigm of the root √ʕwn, makes this clear. Here, all verbs involve the concept of *help*, but there is no stem I verb for this root. It clearly cannot be the case then that all verbs are derived from the stem I verb and that this is the true expression of the root. An account of the root and stem system must explain why some roots appear in combination with certain stems and not others, and this will require a more concrete definition of what a root is, and the way it interacts with the verb stems of Arabic. In the next section I discuss current theories of root and structure as I lay out the theoretical basis for my analysis of the Arabic verb.

2.3 ROOT AND STRUCTURE

2.3.1 Event schemas

The notion that root and structure are interacting elements that build verb meaning together is developed in the work of Rappaport-Hovav and Levin (1998) (hereafter RH&L). They propose two components of verb meaning, one structural and the other idiosyncratic. The structural component is the **event schema**. It is essentially a template for one of the different event types that language describes, such as *action*, *internally caused change of state*, *externally caused change of state*, and so on. The event schema is shared by all verbs of the same semantic

class. All internally caused change of state verbs such as English *bloom*, *decay*, and *rot* for example, are built from the same event schema:

(1) [x BECOME <STATE>]

What distinguishes these verbs from each other is the idiosyncratic component of verb meaning, the root, which is plugged into the event schema to create a unique verb, as shown below for the intransitive verb *decay*:

(2) [x BECOME <decayed>]

In this framework, the root is the verb's core meaning (Levin: 2009) and has an ontological type which is drawn from a fixed set of options, among them *result state* (e.g. *dry*), *thing* (e.g. *saddle*), *stuff* (e.g. *butter*) *container/location* (e.g. *bottle*), and *manner* (e.g. *wipe*) (Levin: 2009). A root's ontological type determines its association with a particular event schema. For example, the roots of the verbs *to bag, to box, to cage,* and *to crate* are all of the ontological type *container*. This type of root is associated with an event schema for an event type in which some entity puts some other entity inside a container, as shown:

(3) [x CAUSE [y BECOME AT <CONTAINER>]]

So, one of the event types that language encodes is the putting of something in a container, and there are roots that name containers which can contribute specific meaning to descriptions of this event type, specifying what the container is. The *container* roots mentioned above plug into this event schema to produce their respective verbs:

(4) to bag [x CAUSE [y BECOME AT <*bag*>]]
to box [x CAUSE [y BECOME AT <*box*>]]
to cage [x CAUSE [y BECOME AT <*cage*>]]

By providing information about the nature of the container, the root serves as a variable, distinguishing one container verb from another. Thus structure is the shared element between all these verbs, and the root is what individualizes one structure from the next. Likewise, all *manner* verbs share the same *manner* event schema:

(5) [x ACT <MANNER>]

Roots which describe manners of acting, for example *jog, run, creak, whistle,* are associated with the event schema, and combine with it to create verbs:

(6) jog [x ACT <*jog*>]
run [x ACT <*run*>]

RH&L view roots as having arguments. They conclude that there are two types of participant in an event structure: those licensed by the event schema, and those licensed by the root alone. For example, the manner event schema shown above licenses one argument (the verbal subject), which tallies with the single argument of a manner root like *run* when this root combines with the event schema to produce a sentence like *John ran*. The manner root *sweep,* however, has two arguments (the sweeper and the surface being swept). When this root is plugged into the manner event schema, the actor argument (the sweeper) tallies with the argument licensed by the event schema, whereas the second root argument does not match up with any argument provided by the schema. In their notation, RH&L (1998) underline root arguments to distinguish them from arguments licensed by the event schema:

(7) [x ACT <sweep> y]

The importance of this is that event schema arguments are always realized in the syntax, whereas arguments that are licensed by the root alone remain optional, hence the acceptability of both *Kim swept the floor* and *Kim swept.*

Levin (2009) proposes that simple events schemas like the *manner* event schema above may be augmented to create a complex event schema for an event that consists not only of an action, but also of a result state. An example is given below (p12):

(8) a. Kelly wiped the table.
[x ACT <wipe> y]
b. Kelly wiped the crumbs off the table.
[[x ACT <wipe> y] CAUSE [BECOME [z NOT AT <*PLACE*>]]]

Thus while the root *wipe* encodes an action that an actor carries out on a surface, further structure may be added to create new meaning.

RH&L's conceptualization of root and structure is useful for the analysis that I will present here in two ways. First, it views roots as lexicalizing basic concepts such as things, states, manners of acting and so on. Second, these concepts may be instantiated as verbs through the provision of structure. For example, a root which lexicalizes a container, and which therefore has no conceptual arguments, may come to describe an event when it appears in the container event schema. RH&L therefore strike a balance between the idea that the root does have some (conceptual) structure of its own, in the sense that certain roots like *wipe* encode actions in which one entity acts on another, and the idea that this basic structure can be augmented. This contrasts with theories like that of Borer (2005a, 2005b, 2009), who sees a much larger role for structure. This is discussed directly.

2.3.2 Structure is everything

The assignment of meaning to a root in a given structural context is treated in depth by Borer (2005a, 2005b, 2009). A root for Borer is a sound-meaning pair whereby a given phonological index is paired with a 'conceptual package'. The root itself has no grammatical properties. That is, there is no such thing as a verbal root or a nominal root. Rather, roots combine with grammatical formatives which categorize them. Grammatical formatives fall into one of two categories: either they are functional morphemes (f-morphs) like English *the* or *will*, or they are head features which merge directly with a root, like past tense, or the English plurality morpheme *s*. Borer emphasizes the importance of structure in the assignment of meaning to the root: *stone* for example, can be used in different syntactic contexts and have

different meanings, but not so *structures* like *three stones*, or *to stone a bird*, where the meaning of the root is fixed. Likewise *form* is unstructured, but *the form*, *forms*, *formed*, or *formation* each represent the combination of the root with a grammatical formative, and hence may be interpreted.

Borer asserts that properties which are traditionally associated with roots are in fact properties of structure. For example, the root *kick* is not specified as a verb, has no argument structure, and does not assign an agent role. Rather, when it appears in a structure where an NP is in a particular position, the root is categorized as a verb and the NP is interpreted as an agentive subject. It is therefore the syntactic structure in which the root appears that determines its interpretation. Crucially, a root does not determine structure, but functions as a modifier of structure, because the meaning associated with any phrase is a combination of its syntactic structure and whatever value is assigned by the conceptual system and world knowledge to the roots embedded in that structure.

Borer therefore rejects the notion that some arguments are root arguments whereas others are structural. She asks where the subject and object arguments of verbs like *to kick* or *to drop* disappear to when the roots appear in nominals like *a kick* or *a drop*. If the subject and object arguments of *kick* and *drop* are structural however, and do not come from the root, then there is no need to explain their absence when the root appears in a nominal structure. If they are root arguments however, they should be present irrespective of the structures in which the root appears.

For Borer all arguments are structural and argument alternations are simply the result of the root being placed in different structures. The root *break* becomes a transitive verb in a structural context licensing two arguments, but is intransitive or middle in a structure providing only one argument. The syntax of argument structure is not therefore specified in the lexical entry for any given verb. If it was, she argues, it would be necessary to posit a set of different lexical entries for a verb that appears in a number of contexts with a variety of arguments. In a model in which argument structure is not specified in the lexicon, there is no need to suggest that one verb is in fact four or five different verbs with the same phonological form.

To recap then, Borer considers roots to be conceptual packages, aspects of which are realized in different structural environments. The use of the root *dog* in a verbal environment, she hypothesizes, picks up on a subset of the conceptual properties of the animal *dog*, creating a

concept separate from, albeit linked to, that of domestic canines. Roots merge with grammatical formatives, which assign a grammatical category, and it is this combination which is then assigned meaning. Meaning is therefore non-compositional for Borer in the sense that it does not involve a structure altering the fixed meaning of a root. Rather, meaning is assigned to a specific combination of root and structure. This is a process that she calls post syntactic non-compositional meaning assignment.

Borer's proposal that a root represents a 'conceptual package' rather than one fixed meaning is attractive in that it helps to explain why some Arabic roots produce verbs with different meanings in stem I. Consider the data below.

Root	**Stem I**
√ḍrb	ḍaraba 'to hit; strike' trns 'to pulsate; throb' int
√qtʕ	qaṭaʕa 'to cut; to terminate' trns 'to traverse; cross' trns
√zyd	zaada 'to exceed; be more than' obl 'to increase' trns 'to increase' int

Table 2: Stem I verbs with two or more meanings.

The stem I verb *ḍaraba* represents the verbalization of the root √ḍrb, but this does not yield a fixed meaning. In Borer's framework, this is explainable because when the root is given only one NP, this is interpreted as the subject argument, and the root produces a verb meaning *pulsate.* When it is provided with an object argument too, it yields a verb meaning *to hit*. The root therefore does not mean *pulsate* or *hit*, but is capable of producing both these meanings in combination with the structure in which it appears. The same line of reasoning holds for stem I *zaada,* which may have the entirely stative meaning *to be more than,* or the caused change-of-state meaning *to increase*. This change-of-state meaning is present again when the verb is intransitive, whereby the subject rather than the object undergoes the increase. It makes no sense to assume than one of these meanings is the true meaning of the root. Rather, the root produces different meanings in combination with different structures.

This is seen again with the root √qtʕ, which produces a transitive stem I verb with (at least) three meanings depending on the nature of the object it is provided with. Given an object

like *aʃ-ʃaʤara* ‘the tree’, transitive stem I *qaṭaʕa* is interpreted as ‘to cut down’; with an object like *al-kahrabaaʔ* ‘the electricity’, it is taken to mean ‘to cut off’; and with an object like *al-muḥiiṭ al-aṭlasii* ‘the Atlantic Ocean’, it is interpreted as meaning ‘to cross’. In each case, the root contributes some abstract notion of *cutting* from the conceptual package that it represents. It combines with a certain structure which, due to what we know about the world and what type of cutting might be done to *a tree*, *electricity*, and *the Atlantic*, encourages a certain interpretation whilst discouraging others. This is entirely in line with Borer’s argument that the root does not contribute any arguments but rather takes on different meaning in different structures. There is no need to propose that roots lexicalize different types of events. The root just provides some element of meaning to a certain type of structure, and another element of meaning to another.

So far so good, but this approach runs into trouble trying to explain why verbs describing the same type of event are created in different stems. The data below show that stem I may produce verbs describing one-participant events, and that stem IV produces a causative verb from the same root.

Root	**Stem I**	**Stem IV**
√ğrq	ğariqa ‘to sink; to drown’ $_{int}$	ʔağraqa ‘to sink; to drown’ $_{trns}$
√ðwb	ðaaba ‘to melt; to dissolve’ $_{int}$	ʔaðaaba ‘to melt; to dissolve’ $_{trns}$
√zwl	zaala ‘to disappear, to cease’ $_{int}$	ʔazaala ‘to remove’ $_{trns}$
√wṣl	waṣala ‘to arrive’ $_{int}$	ʔawṣala ‘to take something to’ $_{trns}$
√ḍhk	ḍaḥika ‘to laugh’ $_{int}$	ʔaḍḥaka ‘to make laugh’ $_{trns}$

Table 3: Causative stem IV verbs from roots that form intransitives in stem I.

The stem I verbs describe what Levin and Rappaport Hovav (1995) term internally caused events, that is, events where the participant which changes state or carries out an action does so under its own steam. In contrast, the stem IV verbs describe externally caused events, where one event participant causes another to act or change state. It might be hypothesized then that stem IV adds an argument to whatever appears in stem I, creating a causative verb. However, the table below shows that stem I may also produce verbs describing externally caused events, and that these alternate with an anticausative formed in stem VII.

Root	Stem I	Stem VII
√ksr	kasara ‘to break’ trns	ʔinkasara ‘to break’ int
√qṭʕ	qaṭaʕa ‘to cut off’ trns	ʔinqaṭaʕa ‘to cut out/off’ int
√ʃqq	ʃaqqa ‘to split’ trns	ʔinʃaqqa ‘to split’ int
√sǧl	ʃağala ‘to preoccupy’ trns	ʔinʃağala ‘to become preoccupied’ int
√fṭḥ	fataḥa ‘to open’ trns	ʔinfataḥa ‘to open’ int
√kʃf	kaʃafa ‘to reveal’ trns	ʔinkaʃafa ‘to become out in the open’ int

Table 4: Stem VII verbs alternating with stem I.

So, externally caused event verbs are created in stem IV, through the addition of causation, but they are also possible in stem I. If structure is everything, it is unclear why this pattern should exist. In theory the only stem necessary would be stem I. A verb could describe a change of state when given one NP, and a caused change of state when give two NPs. This is not what happens. A transitive stem I verb describing a caused change of state like *kasara* ‘break’ cannot simply be given one NP to produce intransitive *break*. Likewise a stem I verb describing an internally caused change of state like *ðaaba* ‘melt’ cannot be transitivized through the addition of a second NP . This suggests that roots do lexicalize different types of event which should not be the case in Borer’s framework, because everything relies on structure.

The contrast exhibited above between roots that produce causative verbs in stem I and anticausatives in stem VII on the one hand, and those that produce internal change of state verbs in stem I and causative verbs in stem IV on the other, leads me to conclude that some roots lexicalize externally caused events, while others lexicalize internally caused events. However, I will also argue that while a root may lexicalize an event, a state, or a thing, it may also combine with other morphemes to produce new meanings which at times appear unrelated to any other manifestation of the root. In explaining how this may be so, I rely on work within the theory of distributed morphology. This is discussed below.

2.3.3 Distributed morphology

The central principle of distributed morphology, as developed by Marantz (1997, 2001) building on work by Chomsky (1975), Larson (1988) and Pesetsky (1995) among others, is that just as words are merged to form sentences, so roots and morphemes are merged to form words. The view of a word as a discrete unit representing the minimal level at which meaning can be analyzed is incorrect.

Marantz views roots as category neutral. A root simply produces a noun in a nominal syntactic environment, and a verb in verbal syntactic environment. He proposes an encyclopaedia that lists meanings of roots in different syntactic contexts. In this way he does away with the need to posit a transformational relation between a sentence like *John destroyed the city* and *John's destruction of the city*. Rather, the root √STROY and the morpheme *de-* merge with a functional head *v* in the first sentence, where they produce a verb, but with a functional head *n* in the second sentence, where they yield a noun. Thus although both words share a common root, neither is derived from the other.

To account for alternations such as *John grew the tomatoes* and *the tomatoes grew*, Marantz (1997) suggests that there is more than one functional head *v*, that is, more than one environment in which a root can realize a verb. One of these, v-1, provides the root with an Agent, and one, v-2, does not. The Agent of transitive *grow* is not therefore an argument of the root √GROW, but is added when the root merges with v-1. The root itself contains one (internal) argument (i.e. the thing that grows). The external (agentive) argument is added by the v-1 head.

For words which do appear to be derived from some other manifestation of the root, Marantz asserts that the merger of a root with a V or N or A head produces a fixed meaning (a verb, a noun, or an adjective respectively), and this structure in which the meaning of the root has been fixed may in turn function as a complement to a head of a different grammatical category. He thereby distinguishes two processes by which words are constructed. The first is that a root merges with a grammatical category such as V or N, and its meaning is fixed, and the second is that the result of this merger is merged again with a different grammatical category, such as N, and the resulting word inherits the fixed meaning of the original structure. For example, the root √GLORY merges with N to create the noun *glory*, and its meaning is fixed. The result of this merger of root and N may then merge with A to create *glorious*, and this may in turn combine with N to create *gloriousness*.

I mentioned in the previous section that event nominals in Arabic are formed in templates which contain any morphemes also present in the corresponding verb, and which preserve the argument structure of that verb. With the exception of stem I, each verb stem has a regular event nominal (or maṣdar) template. One way to view these templates is as modifiers of the orginal verb, which represents the first combination of a root with a grammatical category. That is, a root such as √nql combines with V (plus the /t/ morpheme) to create the stem VIII verb *ʔintaqala* ‘to

move', and this verb then combines with a nominalizing template to create the maṣdar *ʔintiqaal* 'moving; transition'. This noun may then merge again with an adjectival morpheme to create *ʔintiqaaliyy* 'transitional'. The nature of this type of derivation is not my primary focus in this dissertation, and I note it here simply to illustrate that such derivational processes exist. My focus here is the Arabic verb, and the interaction of root and stem which leads to its creation.

Marantz's approach, in which a root combines with different functional heads to create meaning, is adopted and expanded by Arad (2005, 2007). She outlines what she calls the root hypothesis, which rests on the notion that roots lack precise meaning, but acquire it through combination with certain morphemes. For example, the root √HAMMER combines with *v* to yield a manner verb, and with *n* to yield an instrument, but the root alone does not contain either of these meanings. The root is a 'potentiality' that is realized in different ways in different structural contexts.

In her analysis of the Hebrew system of verb stems, Arad relies on the difference between word formation from roots and word formation from words to explain why a solely derivational account is inadequate, even though derivation is clearly an important element of the verbal system. She points out that the meaning of a given set of Hebrew verbs formed from the same root is too close to dismiss them as unrelated, but too far apart to posit a derivation. That is, there clearly is some kind of semantic relation between words derived from the same root, but this relation is often so obscure that it is not possible to state how a certain word builds on or alters the meaning of another.

To account for this, Arad proposes the principle of *Multiple Contextualized Meaning* (MCM), whereby several words formed directly from the same root are assigned meanings independently, relative to each word's structural context. Some morphological patterns, such as certain verb stems, enter into a direct relation with the root, which receives its meaning only when plugged into these morphological templates. She gives the example of the Hebrew root √xšb, which produces the following words in combination with different templates, or patterns (p.54).

Pattern	Word	Meaning
CaCaC	xašav	think
CiCCeC	xišev	calculate
hiCCiC	hexšiv	consider
maCCeC	maxšev	computer
maCCaCa	maxšava	thought
taCCiC	taxšiv	calculus
CiCCon	xešbon	account

Table 5: Arad's (2005) *Multiple Contextualized Meaning*.

Arad asserts that these words all share a common core, being related to mental activity, but that none is derived from the other. Instead, each is derived directly from the root, which yields multiple meanings in different contexts. Word formation from roots is not compositional then, because the root is not a constant meaning component which is modified through the addition of various morphemes. Rather, the root is assigned a certain meaning in a given environment. Compositionality is the case however when word formation is based on words, as these are units in which the root has realized a fixed meaning which may be modified through the addition or suppression of arguments, or by changing grammatical categories. Under Arad's analysis, a root that produces Multiple Contextualized Meaning is assigned two different interpretations in two different stems. In contrast, verbs which have the same meaning and differ from each other only in argument structure while sharing the same root meaning are in a derivational relationship.

Arad's proposal that the root creates meaning in combination with morphemes, and that there is not some fixed semantic base from which all manifestations of the root are derived, is of central importance to the analysis of the Arabic verb that I present in this dissertation. The data below illustrate why this is the case. A derivational account in which a root has a fixed meaning would need to first state the meaning of the root √xlf, and then illustrate how the meaning of every manifestation of this root is directly derived from this core meaning.

Root	Verbs	Nouns
√xlf	xalafa 'to be successor of' trns 'to stay behind' int	xalf 'rear' xaliifa 'caliph; successor'
	xallafa 'to appoint as successor' trns 'to leave behind' trns	xulf 'disparity'
	xaalafa 'to contradict; to violate' trns	xilf 'nipple'
	ʔaxlafa 'to go back on (a promise); reneg' trns/int	

Table 6: Words derived from √xlf.

While there may be shared elements of meaning between most of these words, there is not one easily recognizable semantic structure such as 'x succeed y' which may serve as a base for the derivation of all the other words, and so the notion that what appears in stem I is the true meaning of the root must be abandoned.

The crux of Arad's analysis is that the verb stem system of Hebrew has a dual role. Firstly, some verb stems verbalize the neutral root in different structural configurations. Just as Marantz proposes v-1 which adds an agent to the root, and v-2 which adds nothing, Arad proposes four v heads for Hebrew: one basic; one which produces inchoative verbs; another that yields stative verbs; and a fourth that is causative. Each of these correspond to a different verb stem with which a root may combine. These stems produce root-derived verbs in which the root may have more than one interpretation depending on the context. The second role of the stem system in Hebrew according to Arad is that the remaining stems enter into argument structure alternations with the stems which yield root-derived verbs. Thus a number of stems create verbs from roots, while the others create verbs from words.

In this last point on verbs from words Arad differs from Doron (2003a, 2003b), who views both members of an alternating pair of Hebrew verbs as being derived directly from the root (and not one from the other). Doron asserts that Hebrew verbs containing various morphemes are derived from a root rather than from a base verb. She identifies three types of template in Hebrew in which a root may form a verb: the simple template; the intensive; and the causative. The simple template does not contribute an Actor argument or a causer to the verb, so whether or not these are present in a simple verb depends on the root. The internal argument of a verb is supplied by the root, and active verbs are built in the syntax when roots combine directly with different agency heads that introduce an external argument, and specify whether the verb is

active (in the Intensive templkate) or causative (in the causative template). Meaning is assigned to the different combinations of agency head and root in accordance with the principles of distributed morphology. In addition to the different agency heads present in the different verbal templates of Hebrew, Doron also proposes voice heads, specifically a passive voice head, and a middle voice head. Here she differs from Arad (2005), who suggests that argument alternations in Hebrew occur when words are formed from words.

In the analysis that I present here, I adopt Doron's view that middle verbs are formed not when a certain type of morpheme attaches to a verb, but when a root and a morpheme combine to create a verb (although as discussed in part II I differ in my view of the function of this morpheme). This is not an original observation for Arabic. While there are some Arabic linguists who take the stem I verb as a base for all other derived forms, most notably Ratcliffe (1997), Benmamoun (1999, 2003), and Heath (2003), the predominant view is that the root is a semantic element from which all verbs are derived directly. This view is evident in the work of (McCarthy 1981, 1985), McCarthy and Prince (1990a, 1990b), Holes (2004), and Ryding (2005). However, even when the root, rather than the stem I verb, is recognized as forming verbs in direct combination with the stem, virtually no work exists which is aimed at determining how the root and the stem create meaning. Labels such as causative, anticausative, middle, reciprocal, and so on are attributed to verbs created in certain stems, without considering what such verbs represent, or how they are created. If an Arabic root is a potentiality that creates meaning in combination with different verb stems, what is it that the verb stems provide to the root, and vice versa, that determines why one meaning is created rather than another? That is, how do root and stem together create meaning? This is the central question of this dissertation.

2.4 THE APPROACH

The approach that I take here is as follows. After Borer (2005a, 2005b, 2009), a root is a sound-meaning pairing between three ordered consonants and a conceptual package. Roots lexicalize events, states, or things, or a combination of these, but none of these lexicalizations represent the sum meaning of the root. By this I mean that a root may express an event, a state, or a thing when it combines with a functional head V, A, or N, but it remains free to create new meaning in new contexts. This does not mean that the root is verbal, adjectival or nominal. Many roots that express permanent property states such as *good* or *bad*, may do so in both an adjectival

and a verbal environment. It is therefore necessary to focus on *what* the root expresses rather than *where* it expresses it. Dixon (1982) presents a survey of seventeen languages in which he illustrates that some languages, such as Chinese for example, express what he refers to as *adjectival concepts* through intransitive verbs. Thus while certain concepts may be consistent across language, there is a no rigid correspondence between these concepts themselves and the grammatical categories in which they are expressed.

The verb stems of Arabic represent environments in which a root may create meaning. Stem I is a basic V head. It allows the verbal realization of roots that lexicalize events or states. The other stems represent 'V plus something', that is, V plus one or more morphemes that serve a semantic function, and a root combines directly with each stem to create a verb (following Doron's 2003 analysis of Hebrew). The resulting combination of root and stem (or root and morpheme in V) produces new meaning (after Arad, 2005), and with help from the morphemes with which it combines, a root comes to describe an event type that it does not lexicalize. An example will make this clear. The root √rsl lexicalizes a state, as shown.

Root	**Stem I**	**Adjective**
√rsl	*rasila* 'to be long and flowing' $_{int}$	*rasl* 'easy; loose; long and flowing'

Table 7: Stem I *rasila* and the adjective *rasl*.

The same root may be plugged into stem IV, where it is provided with an Actor subject argument and a goal argument, creating *ʔarsala ʔila* 'to send (something) to'. Thus while the root does not lexicalize an event, other aspects of its meaning may surface when placed in a specific structural context, and it may come to do so. In this way the verb stems provide the root with a structure to which it may contribute meaning. Before examining what these structures are however, it is useful to give an overview of the type of verb produced in stem I, and the events that they describe. This is the aim of the next section.

2.5 STEM I

Roots may lexicalize more than one type of event in stem I. A much quoted distinction between event types is that of Levin and Rapport Hovav (1995), who, building on work by Smith (1970), recognize a basic difference between what they term externally caused events like *shake*,

and internally caused events like *shudder*. Something can *shake* something else, suggesting that this verb encodes external cause, whereas nothing can *shudder* something else. Thus *shudder* is conceptualized as an internally caused event.

Some examples of Arabic stem I verbs which describe externally caused events are given below.

Root	**Stem I**
√ksr	kasara ‘to break’ trns
√ʤmʕ	ʤamaʕa ‘to combine’ trns
√mdd	madda ‘to extend’ trns
√fthˌ	fataḥa ‘to open’ trns
√mlʔ	malaʔa ‘to fill’ trns
√rbṭ	rabaṭa ‘to tie’ trns
√hzz	hazza ‘to shake’ trns

Table 8: Stem I verbs describing externally caused events.

These may be verbs in which the subject brings about a change of state in the object, like *kasara* ‘to break’, or it may be that the subject causes to object to move, like *hazza* ‘shake’.

An internally caused event is one in which an event participant acts or changes state under his or her own steam, without another participant causing this to happen. Following Van Valin (2005) I adopt the participant roles **Actor** and **Undergoer** as cover terms for the role of the subject in an internally caused event. An Actor is in some way responsible for bringing an event about, although this need not be volitional. Examples of internally caused events with Actor subjects are as shown.

Root	**Stem I**
√rkḍ	rakaḍa ‘to run’ int
√ṣyḥ	ṣaaḥa ‘to shout’ int
√ṣwm	ṣaama ‘to fast’ int
√shr	sahira ‘to stay up late’ int
√rkʕ	rakaʕa ‘to bow; to kneel’ int
√qwm	qaama ‘to stand up’ int
√ʤls	ʤalasa ‘to sit down; to sit’ int
√bwl	baala ‘to urinate’ int

Table 9: Stem I verbs describing internally caused events.

Simply put, the event takes place because of something an Actor does or because of some inherent propensity. The middle vowel of a stem I verb may be /a/, /i/ or /u/. Holes (2004) observes that verbs with the middle vowel /a/ usually denote action performed by an agent, whereas /i/ denotes action which in some way affects the agent, which he describes as agent moyen (citing Fleisch, 1979). Thus generally speaking, verbs with Actor subjects have /a/ as their middle vowel, while those with Undergoer subjects, or at least where the subject is affected in some way, may have /i/. Examples of stem I verbs describing changes of state, reactions to stimuli, and states of perception are given in the table below.

Root	**Stem I**
√ğrq	ğariqa 'to sink; to drown' int
√ðwb	ðaaba 'to melt; to dissolve' int
√zwl	zaala 'to disappear, to cease' int
√ḍḥk	ḍaḥika 'to laugh' int
√smʕ	samiʕa 'to hear' trns
√rʔy	raʔaa 'to see' trns
√ʕlm	ʕalima 'to learn of" obl
√fhm	fahima 'to understand' trns

Table 10: Stem I verbs describing internally caused changes of state or actions.

Another type of stem I verb describes an externally oriented event which does not involve causation but is nevertheless directed outward from the subject towards another entity. As these verbs have Actor subjects, the middle vowel is again /a/.

Root	**Stem I**
√ḍrb	ḍaraba 'to hit' trns
√ğsl	ğasala 'to wash' trns
√msḥ	masaḥa 'to wipe' trns
√rsm	rasama 'to draw' trns
√ʔkl	ʔakala 'to eat' trns
√ktb	kataba 'to write' trns
√ḥkm	ḥakama 'to govern; to judge' trns
√rqb	raqaba 'to watch; to observe' trns
√nðr	naðara 'to look at' obl

Table 11: Stem I verbs describing externally oriented events.

I include verbs of creation like *rasama* 'to draw', and verbs of consumption like *ʔakala* 'to eat' in this group, but I note that they have a causative flavour in the sense that the subject

causes the object to come into existence or to disappear. Other stem I verbs describe events of caused transfer or provision in which the subject causes the object to change location, or to be supplied to another participant.

Root	Stem I
√ʔxð	ʔaxaða ‘to take’ trns
√bʕθ	baʕaθa ‘to send’ trns
√nql	naqala ‘to move to; to pass on’ trns
√whb	wahaba ‘to donate; to give’ ditrns
√mnḥ	manaḥa ‘to award’ ditrns

Table 12: Stem I verbs describing events of caused transfer or provision.

Finally, roots that lexicalize permanent property states may also produce verbs in stem I. This is the only type of verb that has the middle vowel /u/.

Root	Adjective	Stem I
√ṭwl	ṭawiil ‘long’	ṭaala ‘to go on for a long time’ int
√bʕd	baʕiid ‘far’	baʕuda ‘to be a distance from; be far’ obl
√ʤrʔ	ʤariiʕ ‘bold’	ʤaruʔa ‘to become bold; find courage’ int
√qṣr	qaṣiir ‘short’	qaṣura ‘to become shorter’ int
√qwy	qawiyy ‘strong’	qawiya ‘to be or become strong (enough)’ int

Table 13: Stem I verbs formed from roots that lexicalize permanent property states.

Thus stem I allows the root to express whatever type of event(s) or state it lexicalizes. A root which does not lexicalize a certain type of event may come to do so in combination with the morphemes provided by the various stems however, and the remainder of this dissertation is concerned with how this occurs.

2.6 SUMMARY

In this chapter I have illustrated that the Arabic root cannot be equated with one fixed meaning represented by a stem I verb. Rather, the root represents a potentiality (after Arad 2005), aspects of which come to the fore as the root combines with the different morphemes contained in the verb stems of Arabic. However, I also asserted that while a root remains free to create meaning, it may also lexicalize events, states, or things, or a number of these, and expresses these meanings when it combines with V, A and N grammatical environments. In the

analysis that follows I examine the ways in which roots combine with different morphemes to construe semantic concepts that they do not lexicalize. Part II deals with the first type of morpheme which conditions verb meaning: reflexive morphemes.

Part II: Reflexivization

Chapter 3. Stem VII

3.1 GOAL OF THE CHAPTER

In this chapter and the next, I illustrate the importance of reflexive morphemes in building verb meaning in combination with a root, establishing both what reflexivization is, and the type of verb it produces. With regard to what reflexivization is, I argue that a reflexive morpheme is a signal that the subject of the verb plays a dual role, and that this morpheme supplies a root with two merged participant roles. Reflexivization is not reflexivization *of* something therefore, but *within* something. That is, a reflexive morpheme does not have to attach to a verb or a root that supplies two participant roles for it to reflexivize. Rather, it supplies these itself. This explains why not every reflexive verb has a non-reflexive counterpart. Argument alternations between intransitive and transitive verbs are a consequence of reflexivization only when a root lexicalizes two participant roles which cannot both be expressed when that root combines with a reflexivize affix. For example, the root √ksr produces transitive stem I *kasara* 'to break', and intransitive stem VII *ʔinkasara* 'to break', and this gives the impression that one is derived from the other. However, roots that do not lexicalize two participants may also combine with a reflexive affix to create verbs, and these verbs do not always enter into an alternation. Thus the root √ṭlq produces stem I *ṭaluqa* 'to be cheerful', but intransitive stem VII *ʔinṭalaqa* 'to set off', which is clearly not derived through the reflexivization of a two-participant root. The creation of argument alternations is one consequence of reflexivization therefore, rather than its purpose. I argue that the function of reflexivization is to create a verb that describes what I term an internally-oriented event. I define this, using terminology from Kemmer (1993), as an event in which the same participant is both the Initiator with which the event begins, and the Endpoint, or terminus of the event. This contrasts with what I term an externally-oriented event, in which one participant acts on, creates, or directs his or her attention towards, another. Thus the aim of this part of the dissertation is to show that reflexivization is a linguistic signal that marks a verb as being internally rather than externally-oriented, and to explore the types of verb that are created in reflexive structures.

I have three aims in this chapter on stem VII. The first is to establish a contrast between externally and internally oriented events in section 3.3, and to show that a reflexive morpheme creates a verb describing the latter. The second is to clarify how it is that the presence of a reflexive morpheme conditions verb meaning in this way. I do this in section 3.3, where I rely on Haiman's (1985) theory of **iconic motivation** to illustrate that reflexivization within a verb blurs the distinction between participant roles to the extent that they are indistinguishable. My third aim is to illustrate how reflexivization works in stem VII verbs. To this end I present an analysis of the verbs created in that stem in section 3.4, where I show that the /n/ affix is primarily limited to interacting with a certain type of root that lexicalizes an externally caused change of state. My argument here is that the root combines directly with the reflexive morpheme (after Doron 2003a/b), but that this morpheme does not reflexive the existing participant roles lexicalized by the root. Instead, it provides a structural context in which the root is prevented from creating a verb describing an externally oriented event. I finish the chapter with a summary of the main points made, before expanding the analysis of reflexivization in chapter 4.

3.2 INTERNALLY-ORIENTED EVENTS

In her crosslinguistic study of the middle voice, Kemmer (1993) identifies several different types of event. She presents the diagram below as a representation of a prototypical two-participant event (the definition of which is based on Givon: 1984) where an animate entity deliberately exerts physical force on an inanimate entity (p.50).

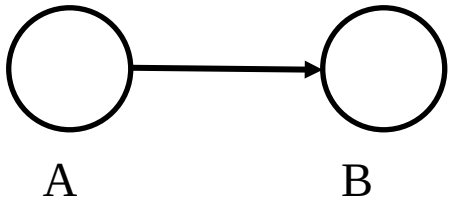

Figure 2: Kemmer's (1993) representation of a prototypical two-participant event.

A verb like *hit* construes such an event, where one participant acts towards, and has an impact upon, another. It is important to note that not all transitive verbs describe the type of transitive asymmetrical event that this diagram represents, and that there is distinction between grammatical transitivity, which simply requires the presence of an object, and semantic

transitivity, which prototypically involves action and the bringing about of an effect. Hopper and Thompson (1980) identify a number of parameters of semantic transitivity which combine to make a clause more or less semantically transitive. The presence of two event participants is just one of these. Others include action, telicity, punctuality, volition, and the affectedness of the object. They point out that a grammatically transitive sentence such as *Jerry likes beer* may be less semantically transitive than a grammatically intransitive sentence like *Susan left*. Whereas *Jerry likes beer* consists of a relation between two entities, it does not involve action or volition, it is not telic, and there is no effect brought about on either participant. In contrast, *Susan left* only has one participant, but the event requires volitional action, it is telic, and *Susan* is affected.

Kemmer's diagram represents semantic transitivity, and does not represent events such as *receive* or *hear*, which do not involve an asymmetric transmission of force from one event participant to another. In Kemmer's terminology, A and B in the diagram represent the **Initiator** and the **Endpoint** of a two-participant event. While the diagram above represents a prototypical semantically transitive event, other types of event which do not involve the transmission of force assimilate to this prototype if they may in some way be conceptualized as asymmetrical, beginning with one participant, and ending with another. Thus an event like *shout at*, which does not involve the same transmission of force as an event like *hit*, is still an asymmetrical event in which one participant acts towards another.

Events like *run*, which involve action that is not directed at another event participant, are represented as shown below in Kemmer's framework (p.99).

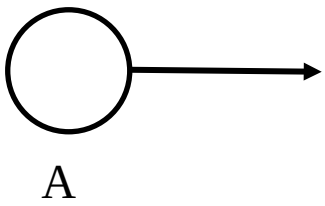

Figure 3: Kemmer's (1993) representation of a prototypical one-participant event.

There is therefore an essential difference between a one-participant event in which a participant acts, and what I will refer to as an externally-oriented event, whereby one event participant acts towards another. However, Kemmer proposes a third type of event, **a middle**

event, in which a participant stands in a relation to itself. This type of event is different to an event like *run,* because it involves both an Initiator *and* an Endpoint, but it is also different to an event like *hit,* because the same entity represents both semantic roles of Agent and Patient. She represents such an event as shown (p.71).

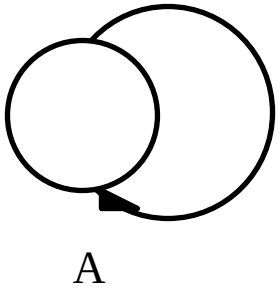

Figure 4: Kemmer's (1993) representation of a middle event.

The intransitive English verbs *wash* and *dress* describe this type of middle event. They are different to verbs like *hit*, in that they do not require a grammatical object, but they are also different to verbs like *run*, in that they construe the presence of an Endpoint, which is understood to be the same entity that represents the Initiator of the event. Kemmer shows that reflexive affixes are present in many languages on verbs which describe this type of middle event, and concludes that the function of such markers is to signal the fact that the Initiator and Endpoint of a relation are merged.

Middle events may involve other event participants, but these other participants do not represent the Endpoint of the event. For example, a verb like *buy* construes an event in which the subject acts, and as a result of that action, the object becomes a possession of the subject. Kemmer represents such events with a linear diagram, but the diagram I present below also captures the looping nature of the relation between the Initiator and the Endpoint.

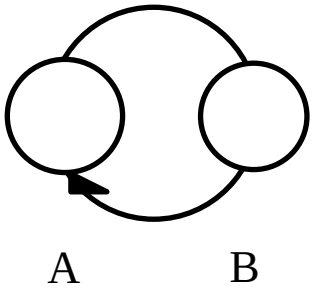

Figure 5: Representation of a middle event involving another participant.

This diagram shows a relation between an Initiator (A), and another participant (B), which then continues to the Endpoint (A). However, because the Initiator and Endpoint of the relation are the same entity, the relation loops back to the participant with which it begins. There are therefore two types of looping relation that are created when the same entity represents both the Initiator and the Endpoint. The first places an event participant in a relation to itself, whereas the second places an event participant in a relation to a second participant, while preventing this participant from representing the terminus of an externally-oriented relation. Thus while some events may be externally-oriented, in the sense that they terminate with an entity other than the subject, a middle event always begins and ends with the subject, and is therefore what I will term internally-oriented.

Two examples from stem VIII will illustrate how a reflexive affix combines with a root to create a verb describing an internally-oriented event. The root √tbʕ produces transitive stem I *tabiʕa* 'to follow'. This may be stative, as in *February follows January*, or active, as in *follow that car*. This active sense is externally-oriented in that the subject acts outwardly, moving toward or pursuing the object, which represents a type of (moving) goal. The same root combines with the reflexive /t/ affix in stem VIII, to produce transitive *ʔittabaʕa* 'to follow'. This is also an active verb, but it is used for following things like instructions, religious teachings and so on. The verb is therefore internally-oriented in that the subject is in a relation with the object,

but does not act outwardly towards it. The action takes place *within* the subject, rather than *between* the subject and the object.

A second example comes from the root √nðr which, together with a preposition, produces stem I *naðara ʔila* 'to look at'. This verb construes an externally-oriented event in which the subject directs his/her attention towards a goal. The same root combines with the reflexive /t/ affix in stem VIII to yield transitive *ʔintaðara* 'to await; to anticipate'. This verb describes an internally-oriented action in which the subject acts but does not direct that action towards an external entity. Like *ʔittabaʕa*, the action remains within the subject and does not project outward. Thus whereas these roots lexicalize externally-oriented events, they combine with the reflexive /t/ affix to produce verbs describing internally-oriented events in which the subject stands in a relation with an object, but that object does not represent the Endpoint of that relation. The /t/ affix therefore determines the type of event that a root may come to describe by providing two reflexivized participant roles, one representing the Initiator of an event, and the other representing the Endpoint. It functions as a signal that the same entity appears twice in the relation construed by the verb. If this is the case however, it is necessary to explain why the affixation of a reflexive affix to a root like √tbʕ which produces *tabiʕa* 'to follow' in stem I does not come to produce a verb meaning 'to follow oneself'. This is the topic of the next section.

3.3 REFLEXIVIZATION WITHIN THE VERB

It is commonly understood that reflexivization is used to construe a relation to the self, so that the same entity acts on itself, experiences itself, and so on. However, reflexivization in Arabic may be expressed with both a full reflexive pronoun (clause-level reflexivization) or a bound reflexive marker incorporated in the verb (reflexivization below the word level, or lexical reflexivization), and there is a difference between these two levels of reflexivization, to be discussed shortly. In order to illustrate the effect of lexical reflexivization on verb meaning, it is first necessary to discuss the importance of word boundaries in determining the degree to which semantic concepts may be fused. I discuss this next, before returning to reflexivization in section 3.2.2.

3.3.1 Concepts within word boundaries

An often cited objection to the breaking down of verbs into components like CAUSE and result states like *broken* and so on comes from Fodor (1970), who offers three reasons why the verb *to kill* should not be considered equivalent to *cause to die*. These are based on the observation that the phrase *cause to die* allows for the separation of the causing event from the dying event in a way that *to kill* does not. First, the constituent parts of *cause to die* retain a degree of independence, and this allows the subject of *cause* and the subject of *die* to be singled out by the phrase *did so* in the examples below (from Fodor, p.431).

(1) a. John caused Mary to die, and it surprised me that he did so. (singles out John)
b. John caused Mary to die, and it surprised me that she did so. (singles out Mary)

The *did so* phrase cannot single out the subject of the dying event supposedly present in *to kill* however.

(2) a. John killed Mary and it surprised me that he did so.
b. *John killed Mary and it surprised me that she did so.

Fodor's second reason why *to kill* does not contain a causative verb and a *to die* constituent is that cause and effect may be separated temporally for *cause to die*, but not so for *to kill (p.433)*.

(3) a. John caused Bill to die on Sunday by stabbing him on Saturday.
b. *John killed Bill on Sunday by stabbing him on Saturday.

Finally, the instrumental adverbial *by swallowing his tongue* in the examples below may be attributed to the subject of the *cause* constituent or the subject of the *to die* constituent when the phrase *cause to die* is used, but this same adverbial may only refer to the subject of *to kill (p.435)*.

(4) a. John caused Bill to die by swallowing his tongue.
b. John killed Bill by swallowing his tongue.

However, the observation that the phrase and the verb are not syntactically equivalent does not automatically entail that they do not consist of the same components. Rather, Fodor's examples illustrate that there is a difference in the way that these components are packaged. The lexicalization of these components in one verb, *to kill*, represents the creation of a cohesive unit that, because it is cohesive, may only describe one event, and as Shibatani (1976) observes, it is this that explains Fodor's data. Keeping two predicates separate in *cause to kill* creates what Shibatani terms a two-event causative, whereas lexicalization creates a one-event causative, not because it has a different semantic makeup, but because its semantic components are more closely integrated.

The idea that semantic elements may be combined at different levels of conceptual integration is central to Haiman's (1983) theory of **iconic motivation,** in which he proposes that a higher degree of separation between linguistic expressions corresponds to a higher degree of conceptual independence between what these expressions represent. Degrees of linguistic separation may be observed in word boundaries and morpheme boundaries, so that if X, A, and Y are morphemes, the linguistic difference between X and Y diminishes along the following scale, where # is a word boundary and + is a morpheme boundary (p.782):

a. X#A#Y (the morphemes X and Y are separate words, and are separated by a word)
b. X#Y (the morphemes X and Y are separate words, but are adjacent)
c. X+Y (the morphemes X and Y are bound morphemes within the same word)
d. Z (no identifiable separate morphemes)

Figure 6: Haiman's (1985) scale of linguistic separation.

An analytic causative like *cause him to die* would be at point (a) on this scale, where X is the *cause* constituent, and Y is the *die* constituent and they are separated by the word *him*. Here there is the maximum degree of linguistic separation between the morphemes that represent these concepts. These same two concepts (*cause* and *die*) are fused in the English verb *kill*, where neither the causation nor the dying receive separate linguistic representation. This is the point of

total synthesis on the scale, denoted by Z in (d). Haiman's argument is that these different degrees of linguistic separation correspond to the different levels of conceptual separation between cause and effect in the analytic and lexical causative pointed out by Fodor (1970), as outlined above.

For Haiman however, these differences do not mean that *kill* does not mean *cause to die*. Rather, the two concepts of *causing* and *dying* are present in both types of causative, and the difference lies in the degree to which they are fused (linguistically and conceptually). In the analytic causative, they retain a degree of conceptual independence. Each subevent may therefore have its own subject, and the two subevents may take place on different occasions. In the lexical causative however, the causation and dying subevents are fused into one event which, being one event, takes place on one occasion, and which, being one event, has only one subject argument. The point here is that concepts which are contained within word boundaries are conceptually closer than when those same concepts are brought together at the clause level, and this observation is especially important in explaining the difference between reflexivization within a verb and reflexivization between the subject and object of a verb. This is the topic of the next section.

3.3.2 Reflexivization within the verb

Just as the integration of concepts like *cause* and *die* within a verb reflects a higher degree of conceptual closeness than that found when these concepts are combined at the clause level, so the integration of a reflexive morpheme within a verb reflects a higher degree of conceptual closeness than that found when a verb appears with a full reflexive pronoun as its object. Haiman (1985) argues that a separate word denotes a separate entity, whereas this is not the case with a bound morpheme. Thus full reflexive pronouns denote an entity that is linguistically separated and more individuated from the subject of the verb in a way that reflexive morphemes are not. He concludes that reflexive sentences containing full reflexive pronouns describe events involving two (co-indexed) participants. A sentence consisting of a verb plus a reflexive pronoun is at point (b) on the above scale, where two separate words are adjacent. The verb requires an object, and this happens to be coindexed with the subject of that verb. In contrast, reflexive sentences consisting of a verb containing a reflexive verbal affix describe one-participant events. They are at point (c) on the scale, involving a higher degree of

both linguistic and conceptual integration. Haiman (p.796) gives the following example from Russian to illustrate this point.

(5) a. On utomil sebja
he exhausted himself
(his will drove his body to exhaustion)

b. On utomil +sja
he exhausted +REFL
(he grew weary)

The verb in (5a), Haiman points out, is agentive, and represents both the action of the subject and the effect on the object, which happens to be co-indexed with the subject. In contrast, the verb in (5b) expresses only the effect on the subject, which is the patient of the sentence. Haiman observes that in Russian a two-participant event involving a reflexive pronoun frequently expresses a situation in which the subject is divided into mind and body, or is in some way divided, in a way that is not the case when the reflexive marker appears (p.797):

(6) a. On utixomiril sebja
He pacified himself
(His better nature prevailed over his enraged self)

b. On utixomiril +sja
He pacified +REFL
(He settled down after sowing his wild oats)

Reflexivization across word boundaries (with a full reflexive pronoun) does not therefore alter the lexical semantics of the verb. A verb may describe an event in which one entity brings about a change in another, and when it appears with a reflexive pronoun it comes to describe an event in which an entity brings about a change in itself. The separate participant roles of Agent and Patient are maintained however, and are filled by the same entity. However, when

reflexivization occurs within the bounds of a verb, the verb describes an event where two separate participant roles are indistinguishable. Reflexivization within the verb therefore involves the fusion of two participant roles, rather than their coindexation.

To illustrate how this type of fusion of participant roles works in Arabic, I return to the example of √tbʕ above. The root lexicalizes an externally oriented event, seen in stem I *tabiʕa* 'to follow', but when it combines with the reflexive /t/ affix to produce *ʔittabaʕa* 'to follow (instructions etc.)' it is placed in an environment where a reflexivized Initiator and Endpoint have already been provided by the affix. In this context the root still describes a *follow* relation, but this relation no longer terminates with the *followed* event participant, because another Endpoint has been added, and this is reflexivized with the Initiator. It is not the case however that three participants can be distinguished, because the Initiator and the Endpoint are fused, and are therefore indistinguishable.

In sum, a reflexive affix provides a root with a fused Initiator and Endpoint, thus forcing the root to produce a verb describing an internally-oriented event that begins and ends with the same entity. In the next section I examine the type of verb that a certain type of root creates in combination with such a reflexive morpheme.

3.4 Reflexivization in stem VII

There are two reflexive affixes in Arabic: /n/ and /t/. There is no difference between these affixes, in the sense that both provide a root with a fused Initiator and Endpoint, but there is a difference in the type of root that combines with each morpheme. With very few exceptions, the /n/ affix of stem VII is limited to creating anticausative verbs from roots which lexicalize externally caused changes of state. I deal with this /n/ affix in this section, before moving to the /t/ affix in stem VIII in the next chapter.

Doron (2003a, 2003b) argues that Hebrew middle verbs are formed when a root combines directly with a middle morpheme. I adopt the same view here for Arabic, but I differ from Doron in the following way. Doron categorically rejects the idea that middle voice marking signifies the presence of an argument in the syntactic structure of the verb which is reflexivized with the subject, and presents a number of tests to show why this cannot be the case. However, these tests do not take into account the degree of conceptual fusion between participant roles discussed in the previous section. Doron presents a Hebrew sentence meaning 'Dani washed

better than his mother', where *washed* is a middle verb. This sentence is not equivalent to 'Dani washed *himself* better than his mother', she concludes, because the latter sentence has two readings (where his mother washes him, or herself), while the former does not. She takes this as evidence that the Hebrew middle verb meaning *to wash* is not reflexive (because if it were, it would allow the two readings that are possible when a full reflexive pronoun is used). However, in light of the discussion in the previous section I suggest here (following both Haiman 1985 and Kemmer 1993) that the reason for this is because the two participant roles of the middle verb are fused, and therefore cannot be singled out by a syntactic test, in the same way that the causing event and the dying event are fused into one in the verb *kill*, and cannot therefore be separated.

Thus Doron (2003a, 2003b) proposes that the function of a middle voice head in Hebrew is not to reflexivize Agent and a Patient roles, but to prevent the projection of an external argument, while at the same time occassionally assigning an an Agent role to the subject. In contrast, I propose that middle marking is reflexive marking in Arabic, and that the subject of the resulting verb may be interpreted as an Agent or a Patient depending on the meaning contributed by the root.

The majority of Arabic stem VII verbs are formed when a root that lexicalizes a two-participant event in which the second participant undergoes a change combines with the reflexive /n/ morpheme. This morpheme provides the root with two reflexivized participant roles. Thus when a root combines with the morpheme, it plugs into a structure which may be represented as shown.

(7) [x _____ x]

The above representation illustrates how the reflexive morpheme functions like a pair of brackets around whatever meaning will be contributed by a root. The first x represents the Initiator of whatever event the verb will come to describe, and the second x represents the Endpoint of that event. In this way the /n/ prevents a root from describing an externally-oriented event. Roots which lexicalize externally caused events plug into this structure. The resulting verbs describe internally-caused changes of state:

Root	Stem I	Stem VII
√ksr	kasara ‘to break’ trns	ʔinkasara ‘to break’ int
√qṭʕ	qaṭaʕa ‘to cut; to cease’ trns	ʔinqaṭaʕa ‘to cease’ int
√ʃqq	ʃaqqa ‘to split’ trns	ʔinʃaqqa ‘to split’ int
√ʃǧl	ʃağala ‘to preoccupy’ trns	ʔinʃağala ‘to become preoccupied’ int
√fṭḥ	fataḥa ‘to open’ trns	ʔinfataḥa ‘to open’ int
√kʃf	kaʃafa ‘to reveal’ trns	ʔinkaʃafa ‘to become out in the open’ int
√dlq	dalaqa ‘to spill’ trns	ʔindalaqa ‘to spill’ int
√ʕqd	ʕaqada ‘to tie; to knot’ trns	ʔinʕaqada ‘to become knotted’ int
√bʕθ	baʕaθa ‘to emit’ trns	ʔinbaʕaθa ‘to emanate from’ int
√fdʒr	faʤara ‘to split; to cleave’ trns	ʔinfaʤara ‘to split; to explode’ int

Table 14: Stem VII verbs describing internally caused events

The process by which a stem VII verb is formed contrasts with passivization, which is carried out through a change in vowel melody in the stem I verb. For example, transitive stem I *kasara* ‘to break’ is passivized to produce *kusira* ‘to be broken’. Saad (1982) notes that the contrast between passive *kusira* ‘to be broken’ and anticausative *ʔinkasara* ‘to break’ is that the former maintains the notion that an external unknown party is responsible for the event, whereas the latter does not imply this. Thus passivization is a grammatical operation that suppresses, but does not delete, the subject of active stem I *kasara*, whereas a stem VII verb like *ʔinkasara* describes an event that simply comes about. In all the examples above, the causer argument present in the stem I verb appears to have been deleted to produce the stem VII verb. In light of the discussion above regarding the way in which reflexivization fuses participant roles however, I suggest that a stem VII verb is formed not by deleting a participant role, but by providing the root with a fused Initiator and Endpoint. This forces the root to describe a one-participant event.

The derivational process of anticausativization is the basis of a study by Koontz-Garboden (2007), in which he presents data from Ulwa, a language spoken on the Atlantic coast of Nicaragua, in order to offer support for the **monotonicity hypothesis**. This is the notion, based on work by Kiparsky (1982) and Cherchia (2004), that semantic operators like CAUSE or BECOME may be added to a verb structure, but not deleted. Koontz-Garboden suggests that anticausativization involves not the deletion of a causer argument, but reflexivization, whereby the causer and the causee come to denote the same participant.

Koontz-Garboden recognizes that a verbalized root in Ulwa may have multiple meanings, and is interested in what types of meaning may be altered by middle voice markers. He adopts

the distinction made by Levin and Rappaport Hovav (1995) between verbs encoding external causation, and those encoding internal causation (see chapter 2). Senses of the root which involve one participant causing a change in another are made anticausative in Ulwa through the incorporation of a middle marker. Senses of the same root which do not involve this kind of external causation do not appear with the middle marker. Hence when a root is verbalized it may yield both external and (in his terms) internal-cause verbs, but only the external-cause sense may be anticausativized.

An example is the root *birh*, which combines with other morphemes to produce *birhpanaka.* This verb has both an internal-cause sense, 'to stink'$_{int}$, and an external-cause sense, 'to tear'$_{trns}$. The same root appears with a middle voice marker to produce intransitive *birhdanaka* 'to tear'$_{int}$ (p144/5). The 'to stink' sense is not available in this middle-marked verb. Thus only the external-cause sense of the verbalized root also appears with a middle marker, while the internal-cause sense does not enter into this alternation. Koontz-Garboden proposes that this middle marker does not delete or suppress a causer argument, but that it serves a reflexivizing function, requiring both the causer and the causee arguments of the verbalized root to refer to the same entity. A simplified representation of the contrast between a transitive external-cause verb and its middle-marked intransitive counterpart under Koontz-Garboden's analysis is given below.

(8) Transitive *birhpanaka* 'to tear' (without middle marking): [x CAUSE y BECOME <torn>]
Intransitive *birhdanaka* 'to tear' (with middle marking): [x CAUSE x BECOME <torn>]

Koontz-Garboden's argument that certain senses of a verbalized root in Ulwa involve external causation, and may therefore be anticausativized through reflexivization, is a good starting point to account for the distribution of the /n/ affix in Arabic, which with few exceptions occurs with roots that lexicalize externally caused changes of state, where one event participant causes a change in another. However, the example below suggests that the presence of CAUSE is not necessarily the determining factor in deciding which root senses combine with the /n/ affix to produce stem VII verbs.

Root	Stem I	Stem VII
√qḍy	qaḍaa ‘to pass (time)’ $_{trns}$	ʔinqaḍaa ‘to go by’ (said of time) $_{int}$

Table 15: Stem VII ʔinqaḍaa.

It is difficult to discern how the subject of stem I *qaḍaa* ‘to spend’ effects the object in any way. One option here is to propose that in fact the verb *qaḍaa* does construe some type of causation, whereby the subject allows time to go by while engaged in an activity, or located in a certain place. This is not a particularly convincing explanation however. The need to shoe-horn causation into the concept lexicalized by the root is removed though if some other property may be found which this root shares in common with the other roots above that combine with the /n/ affix. What all these roots do have in common is that they lexicalize events the progress of which, in Tenny’s (1994) terms, is measured in the object of the verb. That is, the progress of the event described cannot be measured by looking at what the subject is doing, only by looking at what is happening to the object. Transitive *kasara* describes a breaking event which is over when the object breaks. Likewise transitive *qaḍaa* describes a passing event which is over when the object (a period of time) has passed.

Wechsler (1995) observes that an event participant that undergoes a change of state serves a nuclear role, determining the temporal structure of the event. While the object of the verb *qaḍaa* may not undergo a change of state, it does determine the temporal structure of the event that the verb describes, and is therefore a nuclear argument in Wechsler’s terms. Like all the stem I verbs above, *qaḍaa* does not itself construe any information about the subject other than that there is one and that it does something. The nuclear argument, that is, the argument that determines the duration of the event, is the object. The subject acts, or is in a certain location, and time goes by. The action or location of the subject is then specified in an additional (mandatory) phrase. The structure of the verb may be represented as shown.

(9) [[x ACT/BE] and [y <pass by>]]

Whether or not *qaḍaa* should be considered causative however, the important point is that the root √qḍy combines with the /n/ affix to create a stem VII verb that zeros in on the *pass by* element of the larger structure that the root lexicalizes. It is this ‘zeroing in’, or abbreviating, that most stem VII verbs have in common. Roots which combine with the reflexive /n/ affix

lexicalize two-participant events in which a change takes place in the second participant, a Patient in most cases. It is natural therefore that when they combine with a reflexive affix which provides a reflexivized Initiator and Endpoint they produce verbs describing that same change, and it is the participant that represents both the Initiator and Endpoint that undergoes this change. That is, the affix forces the root to describe an internally-oriented event, and the root therefore contributes some aspect of its meaning that works in such a context. The resulting verb is a description of a one-participant event, created from a root that does not lexicalize one. Further support for this analysis comes from the example below.

Root	**Stem I**	**Adjective**	**Stem VII**
√ṭlq	ṭaluqa 'to be cheerful' ṭalaqa 'to be eloquent'	ṭaliiq 'free'	ʔinṭalaqa 'to take off' int

Table 16: Stem VII *ʔinṭalaqa*

Clearly the stem VII verb *ʔinṭalaqa* 'to take off' is not formed from a causative sense of the root expressed in stem I, which does not exist, and seems more related to the meaning expressed by the adjective *ṭaliiq* 'free'[1]. However, this does not present a problem in an account in which a root combines with an affix that provides it with a reflexivized Initiator and Endpoint, enabling it to create a verb describing an internally-oriented event.

Thus the analysis that I have presented here is similar to that offered by Koontz-Garboden for Ulwa, but there is a difference. Koontz-Garboden views reflexivization as operating on causative senses of a root, that is, senses of the root where one event participant acts on another. As a result, reflexivization creates an argument alternation between causative senses of the root and their reflexivized counterparts. In my analysis, a root combines with a reflexive affix, which forces it to produce a verb describing an internally-oriented event by providing it with a fused Initiator and Endpoint. If the root happens to lexicalize an externally-caused event, it will be prevented from expressing this in combination with a reflexive affix, and an argument alternation will result. Thus in Koontz-Garboden's analysis reflexivization is reflexivization *of* something, whereas I make no such claim. In my analysis a root combines with an affix to produce a verb describing an internally-oriented event, and what it produces elsewhere is

[1] Wright (1967) asserts that this verb is derived from stem IV *ʔaṭlaqa* 'to release'. I will argue in the next chapter that a stem I verb cannot be derived from stem IV for a number of reasons.

coincidental. The two views of reflexivization make different predictions. If reflexivization merges roles that are provided by a root, no reflexive verbs without non-reflexive counterparts should exist, since reflexivization needs something to reflexivize. If, on the other hand, a reflexive affix simply attaches to a root, providing it with two reflexivized arguments, it is entirely possible that reflexive verbs with no non-reflexive counterparts may be found. I have shown with the example of *ʔinṭalaqa* above that such lone reflexive verbs do exist. Kemmer (1993) presents data to show that such verbs (she calls them deponents) do exist crosslinguisically. In the next chapter I continue my analysis of reflexivization, where I show further examples of deponents in Arabic.

3.5 SUMMARY

In this chapter I have established that a root combines with a reflexive affix to create a verb describing an internally oriented event. This is an event which may be conceptualized as having direction towards an Endpoint, but this Endpoint is conceptually fused with the Initiator of the event. After Kemmer (1993), I argued that a reflexive affix is a linguistic signal which codes the fusion of the Initiator and the Endpoint. I also argued against the position that a reflexive affix reflexivizes something, be it a verb or a root, that provides two separate participant roles. Instead, I asserted that an affix brings these two (fused) roles with it, and combines with a root, forcing it to produce a verb with an internal orientation. This allows a reflexive affix to combine with a root to produce an internally-oriented verb whether that root lexicalizes a two-participant event or not. However, I showed that most stem VII verbs are formed from roots that lexicalize two-participant events in which the action of the first participant is unspecified, and the second participant undergoes some kind of change. The /n/ affix creates a structural context in which a root is prevented from describing an externally-oriented event, and this creates an argument alternation between an externally oriented stem I verb and an internally oriented stem VII verb formed from the same root. In the next chapter on stem VIII I expand this analysis of reflexivization to incorporate internally-oriented events involving other event participants.

Chapter 4: Stem VIII

4.1 Goal of the chapter

In the previous chapter I argued that reflexivization creates a verb which describes an internally-oriented event from a root that does not lexicalize such an event. The analysis in that chapter was mostly limited to verbs formed from roots that lexicalize externally caused events. My goal in this chapter on stem VIII is to expand this analysis to further support my argument that a reflexive affix brings with it two (fused) participant roles, rather than reflexivizing roles that are provided by the root. I begin by establishing the difference between reflexive verbs formed in stem VII and those formed in stem VIII, where I argue that the same process is at work in both cases, and that the difference in output is due to the meaning contributed by the root in combination with each stem. I then present further data from verbs formed in stem VIII, which contains the reflexive /t/ affix, to show how the combination of a root with a reflexive affix creates verbs describing a variety of internally oriented events, including verbs of autonomous change and motion; verbs in which the subject is divided against itself; verbs of fabrication; verbs with a beneficiary; and verbs of receiving and possession.

4.2 Two types of Reflexive verb

In the previous chapter I relied on the work of Kemmer to establish two types of looping relation in which an event participant stands in a relation to itself. These are reproduced below.

Figure 7: Two types of looping relation.

In both types of relation, the same entity represents both the Initiator and Endpoint. The first relation involves no other participants, while the second relation does, although this second participant does not represent the Endpoint of the relation.

The first type of relation may be construed by either a stem VII verb, containing the /n/ affix, or a stem VIII verb, which contains the reflexive /t/. The difference in the phonological form that a reflexive morpheme takes should, I believe, be discounted, and this view is supported by the fact that in some spoken dialects of Arabic the /n/ affix is not present. A reflexive morpheme, regardless of whether it is /n/ or /t/, always carries out the same function, which is to provide a root with a reflexivized Initiator and Endpoint. Thus both /n/ and /t/ provide a root with the following structure:

(1) [x _____x]

This is not to suggest however that there is no difference between stem VII and stem VIII verbs, but rather that the difference comes from the meaning that a root contributes in each stem. I have already shown that most stem VII verbs are formed from roots that lexicalize externally caused events. The same is true of stem VIII verbs, but in general roots that lexicalize an instantaneous change of state like *becoming broken* or *opening* combine with stem VII, while those that lexicalize events in which the object undergoes a process form intransitive verbs in stem VIII. The table below illustrates a number of stem I verbs in which the subject has an effect on the object. The stem VIII counterparts describe internally-oriented events.

Root	**Stem I**	**Stem VIII**
√mdd	madda ‘to extend’ $_{trns}$	ʔimtadda ‘to extend’ $_{int}$
√nʃr	naʃara ‘to spread’ $_{trns}$	ʔintaʃara ‘to spread’ $_{int}$
√mlʔ	malaʔa ‘to fill’ $_{trns}$	ʔimtalaʔa ‘to fill’ $_{int}$
√hzz	hazza ‘to shake’ $_{trns}$	ʔihtazza ‘to shake’ $_{int}$
√lft	lafata ‘to turn’ $_{trns}$	ʔiltafata ‘to turn’ $_{int}$
√ḥrq	ḥaraqa ‘to burn’ $_{trns}$	ʔiḥtaraqa ‘to burn’ $_{int}$
√nql	naqala ‘to move’ $_{trns}$	ʔintaqala ‘to move’ $_{int}$
√rfʕ	rafaʕa ‘to raise’ $_{trns}$	ʔirtafaʕa ‘to rise’ $_{int}$

Table 17: Stem VIII verbs that alternate with stem I.

However, while the /n/ affix is, for the most part, limited to forming verbs from roots that lexicalize externally caused events where the object undergoes a punctual change of state, the /t/ affix is not. Two examples clarify this point. The first comes from the root √lḥy, which produces stem I *laḥaa* 'to insult', and the seemingly unrelated noun *liḥya* 'beard'. When the root combines with the reflexive /t/ affix in stem VIII, it produces intransitive *ʔiltaḥaa* 'to grow a beard', which describes an internally-oriented event in which the subject both instigates and undergoes a change. Thus while the root lexicalizes the externally-oriented event *insult*, and also has some aspect of meaning related to facial hair, it is unable to produce an internally-oriented event description without structural help, that is, without a reflexive affix that provides a fused Initiator and Endpoint argument.

The second example is from the root √wʤh, which does not produce a current stem I verb (although there is a dictionary form: *waʤuha* 'to be distinguished'). This root also produces the noun *ʤiha* 'direction'. Some aspect of this meaning appears relevant in the verb created when the root combines with stem VIII to produce *ʔittaʤaha* 'to turn towards; to head towards'. The subject of this verb acts and also undergoes the result of that action, and as such has a dual role as both Initiator and Endpoint of a relation. An analysis in which a reflexive affix attaches to either to an existing verb or to a root lexicalizing external cause is unable to account for the existence of verbs such as *ʔiltaḥa* and *ʔittaʤaha* which do not correspond to non-reflexivized counterparts. An account in which meaning is created when a root combines with a stem is not obliged to show an externally-oriented verb from which these internally-oriented verbs are derived however. Reflexivization is not reflexivization *of* a verb (which requires that unreflexivized verb exist), but *within* verb, which may be created in combination with any aspect of root meaning which will yield an internally-oriented event description in combination with a reflexive affix.

The second type of looping relation shown above, in which a second event participant is present but does not represent an Endpoint is represented by stem VIII verbs. An example is

transitive *ʔistalama* ‘to receive’. The root √slm lexicalizes a state, which may be seen in stem I *salama* ‘to be safe; sound’. When this root combines with the reflexive /t/ affix, it comes to describe a relation between the subject of the verb and the object, but that relation is not externally-oriented because it does not involve an outward projection from the subject to the object. Rather, the object enters the possession of the subject, which therefore represents both the beginning and end of the event described. Other examples of this type of stem VIII verb in which the object is in the possession of, or is contained by the subject include *ʔimtalaka* ‘to own’, *ʔiḥtawaa* ‘to contain’, *ʔiʃtamala* ‘to incorporate’, and stem VIII verbs in which the object enters the subject, such as *ʔibtalaʕa* ‘to swallow’, *ʔimtaṣṣa* ‘to suck’, and *ʔirtaʃafa* ‘to sip’. These types of internally-oriented event involve an event participant that is external to the subject, but this external participant does not represent the terminus of the event, and may be viewed as somehow being encompassed or taken in by the Initiator of the event.

Having established that the combination of a root with a reflexive affix creates a verb that describes an internally-oriented event, and having highlighted two different types of looping relation that such a verb may encode, I now move on to examine the types of verb created in stem VIII in greater detail. I begin with verbs which encode a relation solely between a reflexivized Initiator and Endpoint, before discussing verbs that involve a participant which is ‘encompassed’ in a relation between these two reflexivized roles.

4.3 SINGLE PARTICIPANT VERBS

Single participant verbs are formed from roots that do not lexicalize internally oriented events. These may be roots that lexicalize externally oriented events, but this is not a requirement. The examples in the table below gives three examples of the way in which the /t/ affix determines the type of event that a root may come to describe.

Root	Stem I	Stem VIII
√wṣf	waṣafa ‘to describe’ trns	ʔittaṣafa ‘to be characterized (by)’ obl
√rsm	rasama ‘to draw’ trns	ʔirtasama ‘to appear’ int (said of lines on a face)
√ḥml	ḥamala ‘to hold; to bear’ trns	ʔiḥtamala ‘to be possible’ int

Table 18: Stem VIII verbs describing internally oriented events and states.

The root √wṣf lexicalizes an externally oriented event seen in stem I *waṣafa* ‘to describe’. When this root combines with the reflexive /t/ affix, contributes some aspect of its meaning to a structure with a fused Initiator and Endpoint, creating the verb *ʔittasafa* ‘to be characterized (by)’. It is tempting to paraphrase the meaning of this verb as the subject describing itself. *Describing itself* is not a good paraphrase of this verb however, because the act of *describing oneself* requires separate Initiator and Endpoint roles, which happen to be coindexed. That is, the verb describe maintains a distinction between the *describer* and the *described*. In the stem VIII verb the root is placed in a context where separate Initiator and Endpoint roles are prohibited by the /t/ affix. There is therefore a difference in meaning between *describe* (an externally oriented concept) and *characterized by* (an internal property).

A similar analysis holds for √rsm, which lexicalizes an externally-oriented event of creation in which one participant brings about the existence of another (through drawing). The distinction between *the drawer* and *the drawn* is not present in stem VIII *ʔirtasama* ‘to appear’, the subject of which may be a smile, wrinkles, lines on a face, and so on, which are construed as appearing without an external cause. Thus when the root combines with a stem which contains a reflexive affix, the resulting verb must yield an internally-oriented event, and roots which lexicalize externally-oriented events like describe and draw are no longer able to express this meaning. Other aspects of root meaning may come to the fore in such a reflexivized structure. The root √ḥml, which produces externally-oriented *ḥamila* ‘to hold; to bear’ in stem I, is a good example. When this root combines with stem VIII, the result is again an internally-oriented verb, *ʔiḥtamala* ‘to be possible; conceivable’.

In the next section I discuss a different type of internally-oriented stem VIII verb that expresses an event in which the subject may be viewed as divided internally, creating some kind of inner conflict, opposition, or harmony.

4.3.1 The divided self

Talmy's (1985) theory of **force dynamics** rests on the idea that language encodes patterns of opposing forces, where one entity has a tendency towards action (or inaction), and another entity opposes this tendency. Some expressions are neutral in this regard. A sentence like *he is asleep*, for example, does not construe any opposition. In contrast, a sentence like *he cannot wake up* encodes two forces, one acting against the other. The subject of the sentence has a tendency towards waking up, but some unknown force works to prevent this from occurring. In Talmy's terminology, the entity that has a tendency towards doing or not doing something is the **Agonist,** and the entity that opposes this tendency is called the **Antagonist.** Talmy notes that some English verbs describe events in which one entity plays both the Agonist and Antagonist roles, so that the subject either overcomes some tendency within itself, or gives into it. The subject is therefore divided against itself. Talmy gives the example of *to refrain*, where the subject has to stop itself from doing something that it has a tendency to do. A number of stem VIII verbs may be viewed as having a 'divided self' subject, although not all of them are divided in the original sense that Talmy intends for English *refrain*. Examples are given below.

Root	**Stem I**	**Stem VIII**
√mnʕ	manaʕa 'to prevent' trns	ʔimtanaʕa 'to refrain from' obl
√lzm	lazima 'to be necessary' int 'to cling to' trns	ʔiltamaza 'to commit to' obl
√ḍrb	ḍaraba 'to hit' trns	ʔiḍṭaraba 'to become tumultous; conflicted' int
√wzn	wazana 'to weigh something' trns	ʔittazana 'to be balanced' int
√swy	sawiya 'to be worth' trns	ʔistawaa 'to be even or flat; properly cooked' int

Table 19: Stem VIII verbs where the subject is divided against itself.

These verbs all construe events in which the subject is involved in a relation to the self. Whereas the root √mnʕ produces externally-oriented *manaʕa* 'to prevent (someone from doing something)' in stem I, it combines with reflexive /t/ in stem VIII to produce internally-oriented *ʔimtanaʕa* 'to refrain from', where, as per Talmy's observation noted above, the subject acts to counter its own tendency. In a similar vein, stem VIII *ʔiltazama* 'to commit to' describes an event in which the subject places an obligation on itself, representing both the source of the obligation, and the entity on whose shoulders it rests.

A different type of 'divided self' relation has a symmetrical character. The root √ḍrb produces externally-oriented ḍaraba '*to hit'* in stem I, but combines with the reflexive /t/ to produce stem VIII *ʔiḍṭaraba* 'to become tumultous (said of the sea); to become conflicted'. It makes little sense to represent this new verb as 'x hit x' however, as *hit* is an inherently externally-oriented concept requiring differentiated participants. Rather, a different meaning is created when the root enters a reflexivized structure. The resulting verb encodes a concept where one entity is divided internally (into waves in the case of the sea) or into conflicting impulses perhaps when the verb has an animate subject. The two halves of the subject are in opposition, and there is therefore an internally oriented 'impact' in the stem VIII verb which contrasts with the externally oriented impact construed in stem I. The notion of *impact* may not be adequate to describe all aspects of the root, but the point is that in stem VIII the root is placed into a context where there are two participant roles which are both filled by the same entity, and yields a verb describing an relation to the self.

The type of internal symmetry seen in *ʔiḍṭaraba* is seen again in *ʔittazana* 'to be balanced', which may describe both a mental and physical state. The subject here is not balanced against something else, but rather within itself. Each half of the subject balances the other out to create a state of internal equilibrium which obtains of the subject as whole. The same analysis applies to stem VIII *ʔistawaa* 'to be even or flat; to be properly cooked'. When this verb means *flat*, the subject is divided, and each part of it is even with every other part, creating flatness. Thus the subject is not even *with* something, but internally. This is also true when the verb means *properly cooked*. Hallman (2006) observes that this root produces the transitive stem II causative verb *sawwaa* 'to cook properly', and relates this to the abstract concept of *even* that appears in other manifestations of the root by suggesting that *properly cooked* means not under-done and not over-done, that is, the object is even, having not too much (cooking) and not too little. Again here, this is an internal property and neither the object of the stem II causative or the subject of the stem VIII verb are *even* in relation to something else. Thus a relation between two halves of a divided subject may involve opposing forces, as with *ʔimtanaʕa* 'to refrain', or *ʔiḍṭaraba* 'to be conflicted', or it may involve harmony, as with *ʔistawaa* 'to be flat'. In the next section I discuss

a different type of internally oriented event: internally caused changes of state, or verbs of *becoming*.

4.3.2. Verbs of becoming

There is a set of stem VIII verbs formed from roots that lexicalize property states. These stem VIII verbs construe events of becoming, where the subject enters the state lexicalized by the root. Virtually all of these stem VIII verbs appear to stand in an argument alternation with verbs formed in stem IV, which adds causation to the root. Examples are given below.

Root	**Stem I**	**Stem IV**	**Stem VIII**
√kml	kamula ‘to be complete’	ʔakmala ‘to complete’ trns	ʔiktamala ‘to become complete’ int
√wsʕ	wasuʕa ‘to be wide’	ʔawsaʕa ‘to widen’ trns	ʔittasaʕa ‘to widen’ int
√wḍḥ	waḍaḥa ‘to be clear’	ʔawḍaha ‘to make clear’ trns	ʔittaḍaḥa ‘to become clear’ trns
√rxw	raxuwa ‘to be slack’	ʔarxaa ‘to slacken’ trns	ʔirtaxaa ‘to slacken’ int
√xfy	xafiya ‘to be hidden; unknown’ int	ʔaxfaa ‘to hide’ trns	ʔixtafaa ‘to disappear’ int
√qrb	qaruba ‘to be near’ obl	__	ʔiqtaraba ‘to approach’ obl
√bʕd	baʕuda ‘to be far from’ obl	ʔabʕada ‘to take away’ trns	ʔibtaʕada ‘to move or keep away’ obl
√qnʕ	qaniʕa ‘to be content; convinced’ int	ʔaqnaʕa ‘to persuade’ trns	ʔiqtanaʕa ‘to become convinced’ obl

Table 20: Stem VIII verbs of becoming from roots that lexicalize permanent properties.

Clearly these stem VIII verbs are not formed by reflexivizing two participant roles lexicalized in the root. One way to explain them is to posit that stem IV adds causation, and then the /t/ affix attaches to this causativized structure, eliminating the difference between causer and causee. This approach leads to several problems however, not least of which is that stem IV contains a glottal stop which is absent in stem VIII[2], and it is difficult to explain the disappearance of this morpheme if the /t/ affix is added to create the stem VIII verbs shown above. Secondly, stem IV alternates with stem X (the topic of chapter 6), so proposing an

[2] The glottal stop shown in stem VIII is for phonological reasons only, and disappears in connected speech, while the glottal stop of stem IV does not.

additional alternation with stem VIII would require an explanation of why some roots enter into stem IV and stem VIII, while others enter stem IV and stem X. In addition to this, I have already shown, with examples like *ʔiltaḥaa* 'to grow a beard', and *ʔittaʤaha* 'to turn towards', that stem VIII does not rely on the root to provide two participant roles and that the reflexive /t/ affix supplies these, so including stem IV in the derivation is an unnecessary step. In line with this, I view these verbs as the result of the combination of the root with the reflexive /t/ affix, just like all other stem VIII verbs.

To illustrate how reflexivization creates these verbs of becoming, it is useful to compare intransitive stem VIII *ʔimtalaʔa* 'to fill' with intransitive stem VIII *ʔiktamala* 'to become complete'. Both verbs represent the same underlying semantic structure:

(2) [x BECOME <state>]

That is, the concept that each verb expresses is an internally-caused change of state:

(3) [x BECOME <full>]
[x BECOME <complete>]

Neither root lexicalizes this however. The root √mlʔ lexicalizes an externally caused change of state seen in transitive stem I *malaʔa* 'to fill', and as shown above, the root √kml lexicalizes the state *complete*, but not a change of state. Neither root is therefore able to construe the desired semantic concept (x BECOME <state>) without structural help. That is, without a morpheme that specifies that the event is internally-oriented. In both cases, the /t/ affix signals that the Initiator of the event and its Endpoint are the same entity.

In the case of √kml, reflexivization serves to do exactly what the English word *become* does in the structure *become complete*. That is, it contributes the notion of internal change. The English morpheme *become* lexicalizes this notion, whereas in Arabic, internal change is

construed with a morpheme that signals that the Initiator and Endpoint of an event are the same entity. Thus the semantic concept shown below is represented in two different ways in two different languages.

(4) [x BECOME <complete>]

In English, the morpheme *become* specifies the event type, combining with the morpheme *complete* to signify a internal change of state, whereas in Arabic, the root √kml contributes the notion of *complete*, and the fact that the event type is an internal change of state is spelled out with morphemes. The difference is one of lexicalization therefore. Both the event type and the state are lexicalized by two different morphemes in English, whereas in Arabic only the state is lexicalized, while the event type is signaled with a morpheme.

Thus all the stem VIII verbs shown in the table above are the result of a root that lexicalizes a state combining with a reflexive affix. The fact that the root itself provides nothing to reflexivize is not important. What is signaled by the reflexivization is that the same entity represents two parties in a relation, and this in turn creates a description of an internally oriented event. This is entirely in line with the assertion that I made at the beginning of this chapter that the function of reflexivization is to create an internally-oriented event description from a root which does lexicalize such an event. Having discussed intransitive stem VIII verbs, I now move on to stem VIII verbs describing events involving more than one participant.

4.4 VERBS WITH AN ADDITIONAL PARTICIPANT

In the previous section I illustrated how reflexivization creates a variety of intransitive verbs in stem VIII which all share in common the fact that the subject represents both the Initiator and Endpoint of the relation encoded in the verb. In this section I discuss stem VIII verbs which take direct or oblique objects. Despite the presence of an object, the event described

by these verbs is not externally-oriented in the sense that it does not involve an asymmetric relation that starts with one participant and terminates with another. Three examples are given below to clarify this point.

Root	**Stem I**	**Stem VIII**
√ḥwdʒ	——	ʔiḥtaadʒa ‘to need’ trns/obl
√ḥll	ḥalla ‘to take up residence in’ trns	ʔiḥtalla ‘to occupy’ trns
√smʕ	samiʕa ‘to hear’ trns	ʔistamaʕa ‘to listen’ obl

Table 21: Transitive stem VIII verbs where the object is not the terminus of a relation .

The stem VIII verb *ʔiḥtaadʒa* ‘to need’ construes a state in which the subject lacks the object. It is the subject rather than the object that is affected here, and the direction of the relation between the two is not one-way therefore, but rather loops back to the place where it began, in the sense that the subject may be viewed as in some abstract way as requiring the object to move towards it, to enter its possession, or to complete it. A second example of this type of loop relation is evident in stem VIII *ʔiḥtalla* ‘to occupy (a country, a place and so on)’. Whereas transitive stem I *ḥalla* ‘to take up residence in; take the place of’ does not construe the notion of possession, the stem VIII verb does. The subject of *ʔiḥtalla* is not only located in the place represented by the object, but also comes to possess that place. The relation therefore runs from subject to object and then loops back to the subject, which gains a possession as an integral part of its relation to the object.

A final example comes from the root √smʕ, which produces stem I *samiʕa* ‘to hear’ and stem VIII *ʔistamaʕa ila* ‘to listen to’. Semantically, the contrast between *hear* and *listen* is often held to be one of experience versus activity (see Van Valin, 2005 for example). While hearing is undergone, listening is initiated and maintained by the listener. The event of listening therefore involves the listener directing his or her attention towards a sound. This part of a listening event is certainly externally-oriented, involving as it does the outward projection of activity from the subject to the object. However, it is the subject that is affected as a result of this activity, and so again the relation between subject and object does not terminate with the object, but loops back

to affect the subject. The shared characteristic between these stem VIII verbs then is that they encode some kind of looping relation that runs from the Initiator or start point of a relation, to a second participant, and then back to the Initiator, which therefore also represents the Endpoint. In the sections that follow I examine the types of stem VIII verb that encode such a looping relation. I begin with verbs with beneficiary-type subjects.

4.4.1 Beneficiary verbs

A number of stem VIII verbs construe events in which one participant acts in relation to another, and by doing so undergoes an effect. These are formed from externally oriented root senses that surface in stem I. The addition of the /t/ affix to these root senses results in a verb with a subject which is also a beneficiary or some kind of recipient. The table below gives examples of stem VIII verbs where the subject serves a dual role as the Initiator of the event, and the entity which benefits or receives something from it.

Root	**Stem I**	**Stem VIII**
√ğwl	ğaala ‘to destroy (someone)’ $_{trns}$	ʔiğtaala ‘to assassinate’ $_{trns}$
√qtʕ	qaṭaʕa ‘to cut; to cease’ $_{trns}$	ʔiqtaṭaʕa ‘to cut for oneself; to glean’ $_{trns}$
√kʃf	kaʃafa ‘to uncover’ $_{trns}$	ʔiktaʃafa ‘to discover’ $_{trns}$

Table 22: Stem VIII verbs with a beneficiary or recipient subject.

The stem I verbs above all describe externally oriented events which may be represented as causative.

(5) [x CAUSE y BECOME <destroyed>]
[x CAUSE y BECOME <cut>]
[x CAUSE y BECOME <uncovered>]

When these roots combine with the /t/ affix a new Endpoint is added, which results in a verb where the subject causes something to happen, and is the beneficiary or recipient of the effect of this action. This is represented as shown.

(6) [x CAUSE y BECOME <*something*> for/to x]

In this structure the root yields a meaning which is different from, but clearly related to, the meaning that it yields when the reflexive affix is not present in stem I. Thus √ğyl creates externally-oriented *ğaala* 'to destroy' in stem I, but *ʔiğtaala* 'assassinate' in stem VIII, which describes an instance of deliberate killing for a specific purpose related to the benefit of the subject. Likewise, the root √qṭʕ creates a stem VIII verb whereby the subject cuts something for him or herself. Finally √kʃf combines with stem VIII to create a verb in which the subject uncovers something, and is the recipient of knowledge as a result. In all cases the event begins with the subject, is directed towards the object, and then loops back to the subject. Thus between them the root and the reflexive morpheme create a verb that represents a different type of event than the event that the root lexicalizes. Some roots already lexicalize this type of looping relation however. These are the topic of the next section.

4.3.2 Verbs with an inherent effect on the subject

A number of stem I verbs construe events which involve two participants, but the subjects of these stem I verbs already have a dual role as both an Initiator and Endpoint. Kemmer (1993) notes that crosslinguistically there exists a class of middle marked verbs which also have an unmarked counterpart with the same meaning, and points out that the presence of the middle marker on these verbs simply represents the linguistic coding of what is left implicit in the unmarked verbs. In the verbs below, the /t/ affix may attach to roots that lexicalize events that affect the subject.

Root	Stem I	Stem VIII
√ksb	kasaba ‘to gain; to acquire’ trns	ʔiktasaba ‘to gain; to acquire’ trns
√xyr	xaara ‘to choose’ trns	ʔixtaara ‘to choose’ trns
√xṭf	xaṭifa ‘to seize; to kidnap’ trns	ʔixtaṭafa ‘to seize; to kidnap’ trns
√lqṭ	laqaṭa ‘to gather; pick up’ trns	ʔiltaqaṭa ‘to gather; pick up’ trns
√ṣyd	ṣaada ‘to catch; to hunt’ trns	ʔiṣṭaada ‘to catch; to hunt’ trns
√ʃry	ʃaraa ‘to buy’ trns	ʔiʃtaraa ‘to buy’ trns
√frs	farasa ‘to kill and eat’ trns	ʔiftarasa ‘to kill and eat’ trns
√ʕql	ʕaqala ‘to arrest’ trns	ʔiʕtaqala ‘to arrest’ trns
√ʔxð	ʔaxaða ‘to take’ trns	ʔittaxaða ‘to take (for self) (a decision etc)’ trns
√nqm	naqama ‘to take revenge’ int	ʔintaqama ‘to take revenge’ int
√nxb	naxaba ‘to elect’ trns	ʔintaxaba ‘to elect’ trns
√blʕ	balaʕa ‘to swallow’ trns	ʔibtalaʕa ‘to swallow’ trns

Table 23: Stem VIII verbs from roots which encode an effect on the subject.

The stem I verbs in this table do not construe prototypical asymmetrical relations like *hit* in which force is transmitted from one participant to another, where it terminates. Instead, the relation between the two participants is characterized by an inherent effect on the subject which comes about as a consequence of his or her action. Actions like *choosing* and *acquiring* are undertaken by the subject who is also then affected by that action, either through coming to possess something, or through having committed to a course of action. The same is true for action like *kidnapping; picking up; hunting; buying; killing and eating; arresting* and *taking*. With notions like *taking revenge* there is a clear beneficiary role for the subject, while with *electing* the subject is affected by having a new leader as a result of his or her action.

This dual role of the subject as both the start point of an event and an entity affected by it is coded linguistically through the addition of the /t/ affix in the stem VIII verbs above. This is in keeping with Haiman’s (1985) theory of iconic motivation, which requires consistent marking of a certain phenomenon across a language, no matter how obvious. In Arabic, the function of the /t/ affix is to signal that the Initiator and Endpoint of a relation are fused. For some stem VIII verbs, this results in a contrast between a verb that describes an externally oriented event and one that describes an internally oriented event. With root senses which already encode a looping relation, the effect on the subject the addition of the /t/ affix is superfluous, and serves simply to highlight what is already present.

For other roots, the overt appearance of the /t/ affix in stem VIIUI rules out certain senses of the root that appear in stem I. For example, the root √ʔxð yields *ʔaxaða* 'to take' in stem I, and this can construe an event where the object is affected by being taken to a certain location, or it can describe *taking a decision* or *taking a certain form or shape* (although in formal Arabic there is a preference for the stem VIII verb in these latter cases). The stem VIII verb rules out the sense where the object is the affected entity, as the subject is coded as either beneficiary (by taking something for the self) or affected entity (by taking a decision).

The majority of these looping verbs encode the fact that the object enters the possession of the subject. Another type of transitive stem VIII verb exists which does not encode possession, but a type of internal creation which affects the subject rather than the object which is created. I term these origination verbs.

4.3.3 Origination verbs

The stem VIII verbs in the table below construe events in which the subject creates something internally rather than externally.

Root	**Stem I**	**Stem VIII**
√xlq	xalaqa 'to create' trns	ʔixtalaqa 'to contrive; concoct' trns
√ṣnʕ	ṣanaʕa 'to make' trns	ʔiṣṭanaʕa 'to feign; make up; concoct' trns

Table 24: Stem VIII verbs of origination.

The two roots in the table lexicalize events of external creation in which the subject creates the object, and the object then exists independently and outside of the subject. Both the stem I verb *xalaqa* 'to create' and *ṣanaʕa* 'to make' describe asymmetrical relations which run from subject to object, where they terminate. In contrast, when these roots combine with the reflexive /t/ affix to produce stem VIII *ʔixtalaqa* 'to contrive; concoct' and *ʔiṣṭanaʕa* 'to feign; to make up', the resulting verb describes a looping relation, where the subject creates or produces something, but this is not an external process where the subject takes some raw materials and creates the object. It is an internal process where the subject originates the object from nothing.

Thus *ʔixtalaqa* ‘to concoct’ typically takes an object like *a story, a rumour, a battle or an argument* (in which the subject is involved) and so on, while *ʔiṣṭanaʕa* ‘to feign’ may take an object like *interest, an injury* and so on. In each case, the creation of the object has a knock on affect that loops back to the subject, either because the subject benefits from concocting a rumour, or is involved in an argument, or because a certain behaviour or property is attributed to him or her as a result of *feigning*. Whereas the object of stem I *xalaqa* ‘to create’ and *ṣanaʕa* ‘to make’ represents the terminus of a relation therefore, it is the subject of these stem VIII verbs that represents both the Initiator and the Endpoint of the relation construed.

4. 5 SUMMARY

This second part of this dissertation has been devoted to illustrating the contribution of reflexivization as a tool in building verb meaning, and before moving on to the second way in which root and structure interact, it is useful to summarize the main points made. A reflexive morpheme is a signal that the Initiator and Endpoint of an event are fused. A root combines directly with this morpheme, which constrains the root within the following structure, where x marks both the Initiator and the Endpoint of whatever event the resulting verb will describe.

(7) [x _____ x]

Within this structure a root comes to describe one of two looping relations. The first runs from the Initiator to the Endpoint without encompassing any other participants. Both stem VII and stem VIII produce verbs describing such relations. In general, a stem VII verb is created from a root that lexicalizes an externally caused change of state, and the root contributes this change to the stem VII verb, where it is undergone by the subject. Stem VIII verbs also combine with roots that lexicalize externally caused events, but these tend not to involve punctual changes of state. Thus there is no difference between the /n/ and /t/ affixes in the sense that they are both reflexive, and the differences between the verbs that they produce are due to differences in the meaning contributed by a root in combination with each. The second type of looping relation

described by a reflexive verb incorporates a second participant, but this participant does not represent the Endpoint of the relation. This type of relation is described only by VIII verbs.

Importantly, reflexivization below the word level is not reflexivization *of* something, by which I mean that a reflexive affix is not required to fill two participant roles that exist in an unreflexived form elsewhere. Rather, a reflexive morpheme brings these fused roles with it, and it is this which explains the existence of a number of verbs in Arabic which are formed from roots that lexicalize permanent property states like *complete,* or things, like *beard.* The function of a reflexive morpheme is to force a root to describe an internally-oriented event which terminates with the same entity that it begins with. Such events include internally caused changes of state like *break* or *become complete*; internally caused processes like *go by* or *spread;* actions or states in which an entity is in opposition or harmony with itself, like *refrain* or *be flat*; actions like *assassinate* where the actor is a beneficiary; actions like *take a decision* where the subject is affected in some other way; and actions of internal creation, like *concoct* or *feign*. Thus a reflexive morpheme determines the event type in broad terms, and the root contributes some aspect of its meaning within the limits set by this morpheme to create a verb. This type of interaction between a root and a different type of morpheme is the topic of part III, which deals with the verbs created when a root combines with an Actor subject.

Part III: Actor Subjects

Chapter 5: Stem IV

5.1 Goal of the chapter

In the previous section on reflexivization, I showed that reflexive morphemes play a central role in building verb meaning by creating a certain type of structure that creates a verb describing an internally oriented event. Part three of the dissertation is concerned with illustrating the second way in which the structural component of a verb interacts with a root to create meaning: by providing a root with an Actor subject. In this chapter I argue that stem IV provides a root with an Actor argument, and this creates a variety of active verbs that construe semantic concepts such as causation, doing something, going somewhere, and so on. An Actor argument has the potential to cause, to do, to produce, to go, and therefore incorporates all these possibilities. It is the nature of the root with which it combines that determines which of these semantic concepts is most appropriate. Just as reflexivization creates verbs describing internally-oriented events from roots that do not lexicalize such events, so the provision of an Actor argument to a root creates a verb that describes an event not lexicalized by that root. This means that roots that lexicalize one-participant events may create causative verbs, and roots that lexicalize permanent states may create active verbs, as may roots that lexicalize things. In other words, semantic concepts that humans may wish to communicate may be lexicalized by a root. If they are not, a verb that construes a given concept must be built. The Actor argument provided by stem IV is structural, in the sense that it is not lexicalized in any root, and it combines with some aspect of root meaning to create an active verb representing a semantic structure that is not represented in its entirety at the root level.

The argument that a root combines with an Actor to create a verb is not original, and is made for Hebrew by both Arad (2005) (who uses the term Agent) and Doron (2003). However, both Doron and Arad make a distinction between a Hebrew stem (or template) that produces active verbs and a different one that specificies the presence of causation. Based on their data, this seems justified for Hebrew, but Arabic stem IV is less easily presented as a causative stem. For this reason, I maintain that the stem simply provides an Actor argument, and the presence or absence of causation depends on the meaning contributed by the root that combines with it.

I begin by defining what an Actor argument is, and by illustrating why stem IV should not be considered a causative stem. Rather, causation is one of several semantic concepts that a stem IV verb may convey. I then illustrate different types of stem IV verb, beginning with those that do construe caused events. Among these are verbs of giving and sending, which are created from roots that do not themselves lexicalize giving or sending events, but may create giving and sending verbs in combination with a structural Actor subject. I then discuss verbs where the subject is involved in *acting*, or *doing*, rather than *causing*. The majority of these verbs are formed from roots that lexicalize property states like *good* or *high*. Finally, I discuss stem IV verbs formed from roots that lexicalize things, rather than events or states. I end with a summary of how the provision of an Actor subject represents the second way in which the morphemes contained within Arabic verb stems contribute to the building of verb meaning.

5.2 STEM IV IS NOT INHERENTLY CAUSATIVE

Stem IV verbs are formed by the prefixation of a glottal stop followed by the vowel /a/ to the three root consonants of the root. As a result of this prefixation there is no vowel between the first and second root consonants. An example is given below with the root √ðhr.

(1) Stem IV pattern: ʔaC$_1$C$_2$aC$_3$a
Example: ðhr → ʔaC$_1$C$_2$aC$_3$a → ʔaðhara ‘to cause to appear; to demonstrate’

The glottal stop is also found as a causative morpheme in Aramaic-Syriac and Ethiopic (MacDonald: 1963). Wright (1967) asserts that the glottal stop developed from the Hebrew causative morpheme /h/, noting that traces of this causative /h/ still exist in Arabic. Perhaps the best example is the imperative *haat* ‘give’. This is formed through the combination of the /h/ morpheme and the root √ʔty, which yields *ʔataa* ‘to come’ in stem I. Here then the root combines with a certain morpheme to produce a two-participant verb in which one participant causes another to move into the possession of a third. The fact that many stem IV verbs are clearly causative leads Fassi Fehri (2003) to suggest that the glottal stop actually marks plurality, signifying that verbs produced in that stem consist both of a causing event and a second event which comes about as a result of the first. However, the fact is that not all stem IV verbs are causative. Consider the following examples.

(2) ʔaṭaala ‘to take a long time’ int/trns

ʔaḥsana ‘to do well’ int/trns

ʔaṭaaʕa ‘to obey’ trns

ʔabḥara ‘to set sail’ int

Indeed, Zaborski (2007) lists a large number of stem IV verbs which do not appear to be causative, although he offers no explanation as to why causation is only sometimes present. The point is that an account which holds stem IV as a causative stem quickly runs into trouble, and discussion of stem IV should account for the apparent lack of causation in the verbs in the above list, offering a unitary analysis that explains this inconsistent causation while pinpointing what is shared between all stem IV verbs. My approach, in which I view stem IV as consisting of an Actor argument which combines with a root, not a verb, is able to explain both the presence of causation, and its absence. The stem itself does not add causation, but adds a structural argument to a root, creating a verb that is able to construe a semantic structure that the root itself does not lexicalize. In establishing this, I rely on work in derivational morphology by Chomsky (1975), Pesetsky (1985) and Marantz (1997, 2001), among others, which puts forward the notion that unaccusative verbs like English *grow* appear in simple VPs, whereas their causative counterparts are formed in a different kind of structure that provides a structural argument. I propose that stem IV provides the root with an Actor argument, and that this is represented phonologically by the glottal stop inherent in the stem. Following Van Valin (2005), an Actor argument is a broad cover term for any argument which may be considered as the reason why an event takes place. That is, an Actor may be conceived of as bringing about the action of the verb. This contrasts with an Undergoer, who experiences the effect of an event. In the analysis that follows I illustrate how the combination of this Actor argument with a root creates a variety of verbs construing a number of different semantic concepts.

5.3. CAUSATIVE STEM IV VERBS

I noted in chapter II that different event types may be represented by different semantic structures. Events in which one participant causes another to act has the semantic structure below, where I follow Van Valin (2005) in using DO to represent dynamic action.

(3) [x CAUSE y DO something]

Likewise, an event in which one participant causes another to undergo a change of state is represented as shown.

(4) [x CAUSE y BECOME state]

Both these structures are lexicalized by certain roots in Arabic. The root √hzz, for example, lexicalizes caused action, as seen in the transitive stem I verb *hazza* 'to shake', while √ksr lexicalizes a caused change of state, as seen in transitive stem I *kasara* 'to break':

(5) [x CAUSE y DO shake]
[x CAUSE y BECOME broken]

However, other roots do not lexicalize such externally caused events. The root √ḍhk, for example, lexicalizes the one-participant event *laugh,* while √ðwb lexicalizes the internal change of state *melt*:

(6) Stem I ḍaḥika 'to laugh': [x DO laugh]
Stem I ðaaba 'to melt: [x BECOME melted]

Thus these roots may contribute meaning to a causative construction, but they cannot construe such a semantic concept on their own because they do not lexicalize two event participants. The structures below show two semantic concepts that a speaker may wish to communicate, and the meaning that the roots √ḍḥk and √ðwb are able to contribute to such a structure is underlined.

(7) [x CAUSE <u>y DO laugh</u>]
[x CAUSE <u>y BECOME melted</u>]

In order for these semantic structures to receive linguistic representation, an additional argument must be provided to which causation may be attributed. The Actor argument provided by stem IV serves this purpose, as shown in the stem IV verbs below.

(8) ʔaḍḥaka ‘to make laugh’ $_{trns}$

ʔaðaaba ‘to melt’ $_{trns}$

The stem does not supply a CAUSE operator however, but simply an Actor argument which is capable of causing, acting, doing, producing, or going. An Actor argument contains all these possibilities, and it is the nature of the root with which it combines that determines which is appropriate. Talmy (1976) recognizes that a scientific notion of causation is inappropriate for a semantic analysis of language, and that the notion of causation is flexible and context dependent. He therefore rules out the existence of a single deep verb CAUSE, and asserts that there are as many different deep verbs as there are contexts. I adopt the same view, and propose that while the nature of causation is flexible, what is constant is that one event participant is in a relation with a second, and that the second participant carries out an action or undergoes a change under the influence of the first. Thus when a root that lexicalizes an action or change of state combines with an Actor subject, the action of the subject takes on a causative flavour. In contrast, when a root that lexicalizes a place name combines with an Actor subject, the action carried out takes on the meaning of *go to* (the place named by the root), likewise a root that lexicalizes a type of weather such as *rain* combines with this Actor argument, which is then viewed as producing rain. Thus an Actor argument contains the potential to carry out any type of action, and the exact nature of this action is determined by the context in which it appears. Further examples of stem IV verbs where the action of the subject is set as causative due to the fact that the root lexicalizes a one-participant action or a change of state are given below.

Root	**Stem I**	**Stem IV**
√ḍḥk	ḍaḥika ‘to laugh’ int	ʔaḍḥaka ‘to make laugh’ trns
√ðhr	ðahara ‘to appear’ int	ʔaðhara ‘to show; to demonstrate’ trns
√dwr	daara ‘to turn; revolve’ int	ʔadaara ‘to turn’ trns
√smʕ	samiʕa ‘to hear’ trns	ʔasmaʕa ‘to tell; to cause to hear’ ditrns
√rʔy	raʔaa ‘to see’ trns	ʔaraa ‘to show’ ditrns
√fhm	fahima ‘to understand’ trns	ʔafhama ‘to make understand’ ditrns
√nsy	nasiya ‘to forget’ trns	ʔansaa ‘to make forget’ trns
√dxl	daxala ‘to enter’ trns	ʔadxala ‘to insert’ trns
√xrʤ	xaraʤa ‘to exit’ obl	ʔaxraʤa ‘to take out’ trns
√nzl	nazila ‘to descend’ int	ʔanzala ‘to lower’ trns
√ǧrq	ǧariqa ‘to drown; to sink’ int	ʔaǧraqa ‘to drown; to sink’ trns
√wṣl	waṣala ‘to arrive’ int/trns	ʔawṣala ‘to take to’ trns
√θwr	θaara ‘to revolt; rise up’ obl	ʔaθaara ‘to arouse’ trns
√ʕwd	ʕaada ‘to return’ obl	ʔaʕaada ‘to put/take back’ trns
√wqf	waqafa ‘to stand still’ int	ʔawqafa ‘to stop’ trns
√ʕlm	ʕalima ‘to come to know’ obl	ʔaʕlama ‘to tell’ ditrns
√ðwb	ðaaba ‘to melt’ int	ʔaðaaba ‘to melt’ trns

Table 25: Stem IV causative verbs.

In each case above a root that does not encode an externally caused event comes to describe one through combining with the Actor argument supplied by stem IV. Certain roots which yield property states or other internally oriented concepts in stem I also enter into this construction to yield causative verbs:

Root	**Stem I**	**Stem IV**
√sbǧ	sabaǧa ‘to be abundant’ int	ʔasbaǧa ‘to bestow’ trns
√ḍfw	ḍafaa ‘to be copious’ int	ʔaḍfaa ‘to allot; grant something’ trns
√lhm	lahima ‘to covet’ trns	ʔalhama ‘to inspire’ trns

Table 26: Stem IV causative verbs from property state roots

It is important to restate the point here that the root combines with stem IV directly, and the root and stem create meaning together. The meaning that a root yields need not remain constant throughout. Thus *ʔalhama* ‘to inspire’ does not simply represent the addition of causation to *lahima* ‘to covet’. The root produces a *covet* meaning when verbalized in stem I, but remains free to yield an *inspire* meaning in combination with a structural subject.

Most stem IV verbs that are interpreted as causative are necessarily externally oriented. That is, they describe events in which one participant effects another. A small number of roots that encode property states produce causative stem IV verbs that are internally oriented however. These are discussed directly.

5.3.1. Cognitive causation with property states

When a root that encodes a property state combines with an Actor subject argument, it is not possible for that root to yield a verb in which the subject undergoes a change of state, as this would require an Undergoer subject. Stem IV verbs formed from property state roots must have active subjects, and this leads to one of two possible interpretations: either the subject can *cause* something, or it can *do* something (see section 5.4). Some property state roots combine with stem IV to produce verbs describing events where the subject directs mental activity towards the object, and evaluates it. These verbs represent instances of estimative causation. Some examples are given below.

Root	**Adjective**	**Stem IV verb**
√kbr	kabiir ‘big’	ʔakbara ‘to consider great’ $_{trns}$
√ʕḍm	ʕaḍiim ‘great’	ʔaʕḍama ‘to consider great’ $_{trns}$
√bxl	baxiil ‘stingy’	ʔabxala ‘to consider stingy’ $_{trns}$
√ḥmd	ḥamiid ‘praiseworthy’	ʔaḥmada ‘to find praiseworthy $_{trns}$’

Table 27: Stem IV estimative verbs from property state roots.

The Actor subject argument of these stem IV verbs instigates a mental act. The nature of the causation therefore shifts from causation which directly affects the causee, to causation which is confined to the causer. I represent this type of cognitive causation as $CAUSE_{cog}$ in the example below.

(9) ʔaʕḍama ‘to consider great’: [x $CAUSE_{cog}$ y <great>]

Again here, the root itself is unable to convey the semantic concept shown above, and must combine with an Actor argument in order to do so. In some cases, the nature of the root encourages an interpretation where the causation is cognitive simply because this is the most likely concept. Qualities such as stinginess, greatness, or being praiseworthy are properties which are usually brought about through the action of the attributant, and are not usually

considered externally caused. To make something bigger, on the other hand, is an externally caused event which is easy to conceptualize. Nevertheless, the root √kbr does not yield this meaning in stem IV, producing instead *ʔakbara* 'to consider great'. In chapter 7 I argue that the reason for this is that √kbr encodes a scalar concept, and that any change in size may be broken down into incremental movements along the scale that the root encodes. Making something bigger is therefore a plural concept, and as such is expressed in stem II, which produces verbs expressing plurality. The point to be made here though is that the combination of certain property state roots with an Actor subject produces verbs of cognitive causation, where the subject attributes a property to another event participant. Another type of causative verb created in stem IV describes caused transfer. These are discussed in below.

5.3.2 Verbs of caused transfer

In chapter 2 I illustrated that a root may lexicalize an externally oriented event (which incorporates external cause); an internally oriented event; a state; or a thing. Some roots lexicalize more than one of these concepts. I also noted that there is a difference between the assertion that a root lexicalizes a concept and the assertion that this concept is *the* meaning of the root. A root may have primary realizations while remaining free to create new concepts in different structural environments. Thus the root √ʃrf appears to encode an abstract notion of *high* that means it can lexicalize a thing in a nominal environment, *ʃaraf* 'honour; a high place', and a state in an adjectival environment, *ʃariif* 'honourable; high; noble'. In a verbal environment (stem I), the root produces *ʃarufa* 'to be eminent; high-born'. The root is an abstraction, and when it combines with these different grammatical categories aspects of that abstraction are made more concrete. No aspect of the abstract meaning that √ʃrf represents may enter stem I to create a verb describing an action however. But when the root combines with stem IV, which provides an Actor subject, it yields *ʔaʃrafa ʔala* 'to look down on; to supervise'. Here, certain aspects of the conceptual package that the root represents come to the surface, and in combination with structure, create an action verb. The aspects of meaning that emerge in stem IV are related to, but clearly not the same as, those that surface in *ʃaraf* 'a high place', *ʃariif* 'high; noble' and *ʃarufa* 'to be high-born'. With structural help then, a root that does not itself have the potential to describe an action may come to do so.

The same applies to verbs of caused transfer. A root may lexicalize a caused transfer event, or it may create a verb describing one with structural help. Examples of roots that lexicalize caused transfer events are given below.

Root	**Stem I**	**Noun**
√mnḥ	*manaḥa* 'to grant or award' ditrns	*minḥa* 'award; scholarship'
√whb	*wahaba* 'to give or donate' ditrns	*hiba* 'gift; donation'
√bʕθ	*baʕaθa* 'to send' trns	*baʕθa* 'a delegation'

Table 28: Roots that produce verbs of caused transfer in stem I.

The type of caused transfer event lexicalized by these roots may be represented as shown, where z represents a Goal argument.

(10) [x CAUSE y to z]

In the terminology of Levin (2009), the above is a diagram of an event schema, that is, an event type (caused transfer in this case). Stem IV verbs of giving and sending represent the same structure, although unlike the stem I verbs shown above, the roots from which they are formed do not lexicalize it. The roots that yield these verbs may also produce related nominals. Examples are given below.

Root	**Stem IV**	**Noun**
√ʕṭw	*ʔaʕṭaa* 'to give' ditrns	ʕaṭiyya 'gift'
√hdy	*ʔahdaa* 'to give as a gift' ditrns	hadiyya 'gift'
√rsl	*ʔarsala* 'to send' trns	risaala 'letter' rasuul 'envoy'
√slm	ʔaslama 'to deliver' trns	---

Table 29: Stem IV verbs of giving and sending.

The roots √rsl and √slm serve as a good examples of how the provision of an Actor argument enables a root to yield different meanings. They each yield stative stem I verbs, adjectives, and a number of nouns.

Root	Stem I	Adjective	Noun
√rsl	*rasila* 'to be long and flowing' int	*rasl* 'easy; loose; long and flowing'	*risaala* 'letter' *risl* 'moderation' *rasuul* 'envoy'
√slm	*salima* 'to be safe'	*saliim* 'safe; sound; unhurt'	*salaam* 'peace' *salaama* 'safety'

Table 30: The roots √rsl and √slm in stem I

These roots lexicalized states and things, but actions. With the help of the Actor argument provided in stem IV, other aspects of root meaning may surface however.

Root	Stem IV
√rsl	*ʔarsala* 'to let flow; to send away' trns *ʔarsala ʔila* 'to send (something) (to)' trns
√slm	*ʔaslama* 'to submit (to God)' int (become a muslim) *ʔaslama* 'to betray; forsake' trns *ʔaslama ʔila* 'to surrender (something); deliver to' trns

Table 31: Stem IV *ʔarsala* and *ʔaslama*.

When provided with an Actor subject, √rsl produces stem IV *ʔarsala* 'to let flow; to send away'. With the additional of a goal argument to this causative structure, the root yields *ʔarsala ʔila* 'to send (something) to'. Here, the root is placed in the event schema of caused transfer, and aspects of the abstract meaning that the root represents come to the fore in this new context. The same is true for √slm. It lexicalizes a state, but when provided with an Actor argument, it is able to produce a variety of other meanings, and when also provided with a goal argument it produces a verb meaning 'to deliver'. Stem IV verbs of giving and sending are created when the root is placed in the structure below then, whereas stem I verbs of giving and sending are formed from roots which lexicalize this structure.

(11) [x CAUSE y to z]

Another example comes from the root √ʕṭw, which does not produce a stem I verb at all, but yields the stem IV verb *ʔaʕṭaa* 'to give' and the nominal *ʕatiya* 'gift'. This root combines with the structure above without adding very much information at all. It simply specifies the

nature of the transfer as *giving*, as opposed to *lending*, *sending*, *taking* and so on, and yet the root itself does not mean *give* or *gift*. It represents an abstract meaning, aspects of which come to the surface in a nominal environment, and aspects of which come out when it is given an Actor subject in stem IV. I will present further verbs of caused transfer when I discuss verbs formed from things in section 5.5. The important point from this section is that when a root combines with an Actor argument it produces new meanings that it does not produce in the verbal environment of stem I. With the verbs presented so far the Actor subject of stem IV is interpreted as *causing* something. In the next section I discuss verbs where the Actor is interpreted as *doing* something.

5.4 ACTIVE STEM IV VERBS

I have so far been discussing stem IV verbs where a root combines with an Actor argument and the result is a verb which describes a caused event, where the Actor argument has some effect on another entity. This is not always the case. Some stem IV verbs describe actions in which the subject does something without affecting another event participant. The majority of these are formed from roots that yield property state adjectives. I divide these verbs into those where the root contributes information about the manner of doing, that is, *how* something is done, and those where the root describes *what* is done.

5.4.1 How verbs

Some roots that lexicalize property states may combine with stem IV where they function like adverbs, contributing information about how the subject acts. These verbs are similar, but not equivalent, to the set of English 'being' verbs discussed by Partee (1977), Dowty (1977), Smith (1991), and Van Valin (2005). These English 'being' verbs involve states like *good*, *disgusting*, *rude* and so on that are typically permanent attributive properties, as in a *good book*, *a disgusting idea*, *a rude old man*. In the 'being' use (being good, being disgusting, being rude) these adjectives take on a temporary quality, and the constructions in which they appear are active rather than stative. Smith (1991) observes that the types of predicate that can be made active in this way are those which may be controlled by the agent. She explains the difference between *Mary is naughty* and *Mary is being naughty* using the notion of agentive control. Predicates which cannot be controlled by the agent cannot appear as activities, which is why *Mary is being tall* is unacceptable.

Dowty (1977) proposes a DO operator, which is present in sentences like *Mary is being naughty*, signifying the dynamic action undertaken by the subject. My use of the DO operator in the representations below is based on this, in that it signifies dynamic action, but it has a slightly different application. Whereas the operator that Dowty proposes produces an activity like *be naughty* from a stative adjective, the DO operator as conceived of here is parallel to the English verb *do*. The root provides information about the manner of doing. A good example comes from the root √ḥsn, which yields the adjective *hasan* 'good'. When it combines with an Actor argument, this root produces stem IV *ʔaḥsana* 'to do (something) well', as shown.

(12) أحسن اختياره[3]

ʔaḥsana xtiyaara-hu

did well. 3m.sg. choosing-it

'He chose it well'

When this root combines with stem IV then, the Actor argument provided by the stem is interpreted not as actively *being* good, but as *doing* (real) good, or well. While this type of verb may be unfamiliar to a speaker of English, the concept that it represents is not, and may be represented as shown.

(13) [x DO well y]

In English, the semantic concept of *doing* receives linguistic expression in the form of the unbound morpheme *do*, which contributes an Actor subject to the concept contributed by the morpheme *well*. In combination with *do, well* comes to specify the manner of doing. In Arabic the same concepts are represented within one verb, where the glottal stop of stem IV contributes the Actor subject, and the root √ḥsn combines with it and specifies the manner of doing in that structural environment. Further examples of this kind of stem IV verb where the root functions like an adverb are given below.

[3] Munif (2008) p.171

Root	**Adjective**	**Stem IV verb**
√ʤyd	ʤayyid ‘good’	ʔaʤaada ‘to do well; to master’ trns
√xṭʔ	xaaṭiʔ ‘wrong’	ʔaxṭaʔa ‘to do wrongly; to mis-’ trns
√ṭwl	ṭawiil ‘long’	ʔṭaala ‘to do for a long time; for too long’ trns
√syʔ	sayyiʔ ‘bad’	ʔasaaʔa ‘to do badly; to mis-’ trns
√bṭʔ	baṭiiʔ ‘slow’	ʔbṭaaʔa ‘to do slowly’ trns

Table 32: Active stem IV verbs from permanent property states.

In each case, the Actor subject of the verb *does* the object of the verb, and the root comments on *how* this is done. Examples of some of these verbs in context are given below.

(14) لايجيدون القراءة والكتابة [4]

Laa yuʤiiduun al-qiraaʔa wa al-kitaaba
No do well.3mpl def.reading and def.writing
‘They don’t read and write well’

أطالوا النوم في هذا الصباح[5]
ʔaṭaaluu an-nauma fii haaða ṣ-ṣabaaḥ
did long.3mpl def.sleep in this def.morning
‘They slept (too) long this morning’

لأن البرتغاليين كانوا يسيئون التصرف دائما [6]
liʔanna al-burtuğaaliyiin kaanuu yusiiʔuun at-taṣarruf daaʔiman
because def.Portugese.pl.def used to.3mpl do badly.3mp def.behaviour always
‘Because the Portuguese always used to behave badly’

With each of these *how* verbs, the meaning that the root produces in both an adjectival environment and in stem IV verbs remains fairly constant, but this should not be taken to mean that the verb is derived from the adjective. The root combines with the stem directly and aspects of its meaning surface which happen to be the same aspects that surface in the related adjective. The best evidence that *how* verbs are created in direct combination with the root comes from the

[4] BYU: Ahram99 — reference: 022899ECON04
[5] Munif (2008) p.220
[6] Hayat97 — reference: GEN1997:35361

root √ʕwd. This root does not yield a property state adjective at all. It produces a number of verbs and nouns, all of which express, as at least part of their meaning, the concept expressed by the English adverb *again*. Examples are given below.

(15) Stem I verb: ʕaada ‘to return; to revert’ $_{int}$ → to go to again
Stem III verb: ʕaawada ‘to resume’ trns → to begin again
Noun: ʕaud ‘recurrence’ → that which happens again
Noun: ʕaada ‘a custom; a habit’ → that which is done again and again

A constant part of the meaning encoded in this root is shared with the English morpheme re-, which also seems related to the notion of repetition (in some uses). The root √ʕwd combines with stem IV to produce the transitive verb *ʔaʕaada*, which has two different but related meanings, both of which may now be accounted for in light of the preceding analysis. The first of these meanings is transitive ‘to return; to put back’, and the second is ‘to do again’, which in terms of meaning is equivalent to English *re-* when it affixes to verbs like *think*, *examine* and so on. Examples are given below.

(16) أعادها إلى مكانها [7]

ʔaʕaad-ha ʔila makaani-ha
returned.3msg-it.fsg to place-poss.fsg
‘He returned it to its place’

المؤرخون الجدد الذين أعادوا النظر بحرب 1948 [8]
al-muʔarrixuun allaðiina ʔaʕaaduu an-naðar bi-ḥarb 1948
def.historians who did again.3mpl def.look at war 1948
‘The historians who rethought the 1948 war’

[7] Munif (2008) p.120
[8] BYU: Hayat97 — reference: GEN1997:11451

حكام الإمارات أعادوا انتخاب زايد رئيسا [9]

ḥukaam al-ʔimaaraat ʔaʕaaduu ntixaab zaayid raʔiisaan

rulers def.emirates did again.3mpl election Zayed president

'The rulers of the Emirates re-elected Zayed president'

The analysis that I have put forward for stem IV may account for these two verb types as follows. The structure of stem IV consists of an Actor argument which combines with a root to create a verb that gives linguistic representation to a semantic structure. There are two semantic structures that a speaker may wish to communicate, and the same root is able contribute meaning to each of them, even though it lexicalizes neither. They are as shown.

(17) [x CAUSE y return to z]

[x DO again y]

When the root √ʕwd combines with an Actor subject, and a GOAL argument, it contributes a *return* meaning, producing transitive stem IV *ʔaʕaada* 'to return'. In contrast, when the same root appears with an Actor subject and is given a nominalized verb like, *naðar* 'looking at', *ʔintixaab* 'election' and so on as a direct object, the root contributes an *again* meaning, and the resulting verb comes to mean *do again*. This stem IV verb therefore has two different interpretations, and different aspects of root meaning surface in each. This would not be possible if the root had a fixed meaning equatable with one if its many surface realizations. And it would not be possible if stem IV verbs were formed in combination with a word, rather than a root. Thus while the root may lexicalize the one-participant event *return*, it does not *mean* this, and remains free to yield different meanings in different structural contexts.

In this section I have discussed stem IV verbs in which the root comments on how something is done. In the next section I illustrate a different type of verb in which the

[9] BYU: Watan02 — reference: 011204t41841FRON

combination of a stative root with an Actor argument creates a verb that describes *what* the subject does.

5.4.2 What verbs

Some roots that produce property state adjectives combine with an Actor subject in stem IV to produce verbs describing what the subject does. Examples are given below.

Root	Adjective	Stem IV
√qdm	qaduum 'bold'	ʔaqdama ʕala 'to embark upon' $_{obl}$
√ʃfq	ʃafiiq 'compassionate'	ʔaʃfaqa ʕala 'to pity' $_{obl}$
√ʃrf	ʃariif 'honourable; high'	ʔaʃrafa ʕala 'to oversee; supervise' $_{obl}$

Table 33: Stem IV *what* verbs.

The contribution of the root to the meanings encoded in these stem IV verbs is not to describe how something is done. For example, *ʔaqdama ʕala* 'to embark on' does not mean *to do boldly*, just as *ʔʃrafa ʕala* 'to oversee' does not mean *to do highly*. Rather, whereas these verbs lexicalize purely static concepts, they combine with an Actor subject and the preposition *ʕala* 'upon' to produce verbs in which the subject actively engages in something. That is, they contribute information about what the subject does. The aspects of root meaning that surface in this structural context are different to those that surface in the adjectives, even if they are related at some deeper level.

The stem IV verb *ʔaffaqa ʔala* 'to pity' is borderline stative, but there is some sense in which the subject participates in the state rather than simply undergoing it. In Carlson's (1977) terms, the property states *compassionate*, *bold*, and *honourable* are individual predicates. That is, they are generally true of a person and do not depend on action. In contrast, a state like *pity* is a stage predicate which represents a description of a person for a limited period of time. Thus someone may be *compassionate* as a general quality, but *pitying* involves that person activating the quality on a specific occasion. Viewed in this light, *pitying* is active. Thus while the root may lexicalize an individual predicate in an adjectival environment, stem IV provides an Actor, and so root and stem between them create a stage predicate in which the subject *acts* rather than *is something*. A similar analysis applies to the controlled state verbs in the next section.

5.5. CONTROLLED STATES

There are three stem IV verbs which appear to be stative. They describe cognitive states of *feeling*; *loving* and *wanting*:

Root	Stem I verb	Stem IV verb
√ḥss	ḥassa ‘to feel’ trns	ʔaḥassa ‘to feel’ trns
√rwd	raada ‘to head for; search for’ trns	ʔaraada ‘to will; to want’ trns
√ḥbb	ḥabba ‘to love’ trns	ʔaḥabba ‘to love’ trns

Table 34: Stem IV controlled state verbs.

In each of the stem IV verbs above, the subject is involved in some form of cognitive activity. Smith (1991) discusses states which are conceptualized as temporary, rather than as permanent properties, and which are under the control of an agent. The type of cognitive state above may be conceived of in this way. States of feeling, desire, and love are obviously predicated of animate subjects, but these subjects do not play an entirely passive role. The states come about and continue to obtain due to cognitive activity initiated by the subject and directed towards another party. This contrasts with states of perception like *witness, hear* and *see,* which come about as the result of a stimulus directed at an undergoer.

Thus I maintain that these three stem IV verbs are created when the root combines with an Actor subject. For the roots √ḥss and √ḥbb the result is no different from what happens when the roots are verbalized in stem I, although it should be mentioned that the stem I verbs *ḥassa* ‘to feel’ and *ḥabba* ‘to love’ are not used in formal Arabic. The root √rwd produces the stem I verb *raada* ‘to head for’ which also has an Actor subject. The provision of a structural Actor subject in stem IV however creates a verb in which the subject seeks something cognitively rather than physically. Thus although the reason why this root yields a physical verb in stem I and a cognitive verb in stem IV is far from clear to me, the fact that it does support the central claim made in this part of the dissertation, which is that structure builds verb meaning by providing a root with a subject argument which is not present in whatever semantic concept that root lexicalizes. The proposal that stem IV provides an Actor argument is further supported by the data in the next section, where I discuss verbs that construe events involving things.

5.6 VERBS FROM THINGS

The provision of a structural argument allows roots that lexicalize things to create verbs in stem IV. It is an empirical question whether these are denominal verbs or whether they are root derived. That is, whether the root enters a nominal environment to create a noun which is then verbalized in stem IV, or whether the root combines with the stem directly. Given the view of roots that I adopt in this dissertation, the idea that a root creates a noun and then a verb involves an unnecessary step, since the particular aspects of root meaning that surface when the root enters a nominal environment remain free to surface in a verbal environment if provided with a subject. I begin this section with a discussion of denominal verbs, before presenting a variety of stem IV verbs derived from roots that lexicalize things.

5.6.1 Denominal or root derived?

It is well established that the names of things may be used as verbs, and this type of verb is usually considered to be formed from a noun. In their treatment of denominal verbs in English, Clark and Clark (1979) point out that the meaning of a denominal verb is determined by the context in which it is placed. They observe that in a sentence like *Julia centrifuged the solution*, the denominal verb *centrifuge* must describe an event which encompasses not only the parent noun *centrifuge*, but also the subject and object arguments of the verb. An interpretation of this sentence in which *Julia* is an agent, *the solution* is a patient, and the *centrifuge* is an instrument that Julia uses, encompasses all three elements present in the sentence in a coherent fashion.

The important point is that the word *centrifuge* does not require a subject and an object, and does not mean 'to do something to something else using a centrifuge'. It is simply placed into a context where a subject and object are present, and the entire structure is interpreted accordingly. In other words, if you take the word *centrifuge* and give it a subject and an object, the structure created encourages a certain interpretation of what *centrifuge* means.

Further, Clark and Clark observe that the kind of event that a denominal verb may describe will vary according to the type of arguments present in the structure (p.803):

(18) David tented the blanket
David tented the baby before the storm hit
The marines tented the hillside
David tented near the river

The verb *to tent* therefore cannot be considered to have one fixed meaning, but rather it is interpreted depending on the type of structure it appears in and the nature of the arguments it is given. Tenting a blanket is unlikely to be interpreted as putting a blanket in a tent, just as tenting a baby is unlikely to be interpreted as making a tent out of a baby.

Clark and Clark assume in their discussion that the verb *tent* is formed from a noun, but it could equally be the case that it is formed from a root. If the root that yields the noun *tent* is placed in a verbal environment and provided with a subject and an object, assumedly the result would be the same. Kiparsky (1997) observes a contrast between what he terms true and apparent denominal verbs in English. True denominals retain the meaning of the noun that they incorporate. The English denominal *to box*, for example, will only allow an extension that matches the incorporated noun, that is, it must also be *a box* (p.12):

(19) to box a present in a gift box (# in a brown paper bag)

Other denominals like *dump* and *ditch* do not exhibit this restriction (p.13):

(20) to dump garbage by the roadside
to ditch a car in a vacant lot

These, Kiparsky proposes, are not in fact denominal verbs, but are verbs related to nouns only because both are derived from a common root. He points out that this distinction between verbs derived from nouns and verbs that share the same root as a noun may be observed in the stress patterns of certain English verbs. The English denominal verbs *to pattern* and *to index* retain the stress on the initial syllable that is characteristic of the nouns from which they derive. In contrast, the stress shifts from the first syllable of the nouns *a protest* and *a permit* to the

second syllable in the verbal forms *to protest* and *to permit*, suggesting that these are basic verbs that share a common root with, but are not derived from, the related nouns (p.16).

This type of stress contrast is of course not found in Arabic, where all verbs of a given stem follow the same stress pattern. Further discussion of whether a verb is denominal of derived directly from a root is therefore fruitless. Given that no Arabic verb shares an identical phonological form with noun however, I will assume that denominal verbs do not exist in Arabic until a convincing argument is put forward that proves otherwise. The point that I want to make is this section is that roots that lexicalize things produce verbs in stem IV because they are provided with an Actor subject, and whether they form nouns before this takes place is not of great importance. I now move on to illustrate the different types of verb that are formed from roots that lexicalize things.

5.6.2. Places and Times

When a root that yields a place name is plugged into stem IV, the result is a verb that describes a relation between the Actor subject provided by the stem and the place named by the root. This type of verb is a linguistic representation of the semantic structure shown below.

(21) [x GO TO <place>]

Whereas this concept is expressed with the separate morphemes *go*, *to* , and a place name in English (and with separate morphemes in Arabic in most cases), certain Arabic roots that yield Arabic place names may merge with an Actor subject to express such a structure. This type of verb is relatively archaic however. The following examples are not used today.

Root	Noun	Stem IV verb
√ʕrq	*al-ʕiraaq* 'Iraq'	*ʔaʕraqa* 'to go to Iraq' int
√ʃwm (?)	*aʃ-ʃaam* 'Syria'	*ʔaʃaama* 'to go to Syria' int
√ymn	*al-yaman* 'Yemen'	*ʔaymana* 'to go to Yemen' int
√ndʒd	*nadʒd* 'Nejd Highlands'	*ʔandʒada* 'to go to the Nejd Highlands' int
√thm	*tihaama* 'Tihama plain'	*ʔathama* 'to go to the Tihama plain' int

Table 35: Obsolete stem IV verbs of going.

More contemporary examples of this kind of stem IV verb also involve the subject going to, or coming to, a place or time contributed by the root:

Root	Noun	Stem IV verb
√ʃrq	*ʃarq* 'east'	*ʔaʃraqa* 'to rise' $_{int}$ (said of the sun)
√bḥr	*baḥr* 'sea'	*ʔabḥara* 'to go to sea; to sail' $_{int}$
√ṣbḥ	*ṣabaaḥ* 'morning'	*ʔaṣbaḥa* 'to get up in the morning' $_{int}$ 'to become' $_{trns}$

Table 36: Contemporary stem IV verbs of going.

The verb *ʔabḥara* 'to sail' is a good example of a verb formed from a thing which allows unrelated extensions. Although related to the noun *baḥr* 'sea', it can be used to describe sailing on a river or any other body of water. This may be viewed as case of semantic bleaching in which the meaning of the verb has changed over time. Alternatively it may be that the verb is derived from a root that lexicalizes a thing, but which may create new meaning when provided with a subject. In either case, the point is that the provision of an Actor subject allows the creation of a verb. The root √ṣbḥ provides a more obvious case of semantic bleaching. The verb *ʔaṣbaḥa* 'to get up in the morning' may also mean *become* (where the Actor role of the original verb is lost).

5.6.3 Flowers and leaves

Verbs describing spontaneous actions like *bursting into leaf* or *flowering* are created in stem IV. Here the Actor subject produces, or is the source of, the thing contributed by the root .

Root	**Noun**	**Stem IV verb**
√wrq	*waraqa* 'leaf'	*ʔawraqa* 'to put out leaves' $_{int}$
√zhr	*zahr* 'flower'	*ʔazhara* 'to flower, blossom' $_{int}$
√θmr	*θamar* 'fruit'	*ʔaθmara* 'to produce fruit' $_{int}$

Table 37: Stem IV verbs of production.

The type of event described is by this type of verb is one of outward projection where the subject brings forth leaves, flowers or fruit, which while part of the subject, have an independent existence. The outward projection construed by stem IV *ʔazhara* 'to flower' contrasts with the internally-oriented event construed by the stem VIII verb formed from the same root, intransitive *ʔizdahara* 'to flourish', where the Initiator and Endpoint of the event are reflexivized, signaling that the event does not terminate with an entity other than the subject.

5.6.4 Weather verbs

Another group of stem IV verbs formed from roots that lexicalize things consists of weather verbs. The dummy *it* in English *it rained* is not present in the Arabic equivalent, where the subject of the verb is the sky (a feminine noun). With weather verbs an entity like *rain* or *snow* is brought about by the subject.

Root	**Noun**	**Stem IV verb**
√mṭr	*maṭar* 'rain'	*ʔamṭar-at* 'to rain'
√θldʒ	*θaldʒ* 'to snow'	*ʔaθladʒ-at 'to snow'*

Table 38: Stem IV weather verbs.

Figurative uses are possible when the root is provided not just with a subject, but is placed into a construction with a double object:

(22) أمطروهم بوابل من النار من الأسلحة الرشاشة [10]

ʔamṭaruu-hum bi-waabil min al-ʔasliḥa al-raʃʃaaʃa
rained.3mpl-him with-hail of def.weapons def.sprayer
'They showered them with a hail (of bullets) from (their) machine guns'

Thus roots that lexicalize things related to weather may produce more sophisticated verbs when provided with additional structure, and aspects of their meaning become more relevant depending on what that structure is. In this case the relevant aspect seems to be related to the idea of multiple individual droplet shapes moving towards a goal, rather than the fact that rain consists of water, for example.

5.6.5 Incorporated theme verbs

In section 5.3.2 I discussed stem IV verbs that construe events of caused transfer, and illustrated that these are created when a root is placed in a context where it is provided with a structural subject, a theme argument, and a goal, as shown.

[10] BYU: Hayat97 ref: NEW1997:30807

(23) [x CAUSE y to z]

The roots I discussed in that section provide information about the nature of the transfer, identifying it as *sending*, *giving*, *surrendering*, and so on. Another set of caused transfer verbs consist of those where the root provides information about the theme argument, that is, *what* is given or provided, rather than *how* it is given. Examples are given below.

Root	Stem I	Noun	Stem IV
√qṭʕ	qaṭaʕa 'to cut' trns	quṭʕa 'plot of land'	ʔaqṭaʕa 'to give a plot of land' ditrns
√mhl	mahala 'to tarry' int	muhla 'respite'	ʔamhala 'to give respite' trns/ditrns
√fyd	__	faaʔida 'benefit'	ʔafaada 'to benefit' trns
√xbr	__	xabar 'news'	ʔaxbara 'to inform' ditrns
√ğyθ	__	ğayθ 'aid'	ʔğaaθa 'to aid' trns

Table 39: Stem IV transferred theme verbs.

In these verbs, the root does not specify the type of transfer event, but rather what it is that is transferred. For example, the stem IV verb *ʔamhala* 'to give someone time' is clearly related to the nominalization *muhla* 'respite, notice, time limit'. Here, the root provides information about one of the arguments in the structure that stem IV provides.

(24) [x CAUSE <something> to z]

The verb may be ditransitive, with the second object specifying the length of time awarded:

(25) المالكي ينفي أن واشنطن أمهلته شهرا [11]

al-maaliki yanfii ʔanna waaʃinṭun ʔamhalat-hu ʃahran
Al-Maalki denies that Washinton gave-time.fsg-him month
'Al-Maaliki denies that Washington gave him a month'

This second object (*a month* in the example above) represents an instance of what Jackendoff (1990) terms argument fusion in his analysis of English denominal verbs. In a

[11] *http://www.alriyadh.com/2007/06/20/article258458.htm*

sentence like *we buttered the bread*, *butter* is what he calls an incorporated theme, meaning that it is the butter which is moved, transferred, or applied to the object of the verb, the bread. Yet Jackendoff observes that it is also possible to add a theme using a with phrase, resulting in a situation in which there is both an incorporated theme and an overt theme, but without any ambiguity surrounding what exactly was put onto the bread:

(26) We buttered the bread with creamy unsalted butter.

For the above sentence Jackendoff proposes that the object of the *with* phrase fuses with the incorporated theme *butter*, and this places selectional restrictions on the overt theme that require it to be a buttery substance. It is for this reason that sentences like *we buttered the bread with jam* are unacceptable.

The notion of an incorporated theme which fuses with and imposes selectional restrictions upon an overt theme explains how *ʔamhala* 'to give time' may take a second object. It also explains how a ditransitive stem IV verb like *ʔaqṭaʕa* 'to give land' will only allow an overt theme which matches with incorporated theme *quṭʕa* 'a piece of land':

(27) اقطعتهم اراضي زراعية في جنوب الهند[12]

ʔaqṭaʕtu-hum araaḍiiya ziraaʕiyya fii januub il-hind
gave land.1sg-them lands agricultual in south def.India
'I gave them agricultural lands in the south of India'

It may be that this type of incorporated theme verb is derived from a noun, or it may be created when a root that lexicalizes a thing appears in a structure that encodes transfer of a thing, and simply contributes the same meaning that it yields when it enters a nominal environment. In either case, it is the provision of a structural Actor subject that allows the root to form a verb.

5.7 SUMMARY

In this chapter I have argued that stem IV consists of an Actor subject argument, and that this argument has the potential to cause, conceptualize, act, do, produce, and go. These semantic concepts are all within the power of an Actor argument, and it is the nature of the root, in

[12] BYU: *Hayat96; ref: GEN1996:9978*

combination with any object arguments, that determines which particular aspect of the power of the Actor will come to the fore. Roots which lexicalize internally-caused events combine with the Actor argument of the stem, and the nature of the action becomes causative in such a context. Roots that lexicalize property states either produce verbs of cognitive causation, where the subject of the verb attributes the relevant state to the object, or they produce verbs where the subject acts, and the root then serves to provide information either about *how* something is done, or *what* is done. When a goal argument is added to the stem, it produces verbs of caused transfer. Here, the root may specify the nature of the transfer event: *giving*; *gifting*; *sending*, or it may provide information about the theme argument that is transferred. Roots that lexicalize things also combine with this stem, and the Actor subject is interpreted as going to a place, producing something, or transferring or providing something. Thus root and stem interact. The provision of an Actor argument allows the root to contribute new aspects of its meaning that are not always present in the concept that it lexicalizes, and in turn the nature of the root determines which aspect of the potential for action embodied in the Actor argument will come to the fore.

An important factor in the building of verb meaning is therefore the provision of a certain type of structural argument, because this allows roots to create verbs describing events that these roots do not lexicalize. In other words, it provides the root with structural help, enabling it to express new meanings. In the next chapter I build on the analysis developed I have developed here as I examine the types of verb created when a root combines with an Actor subject and a reflexive affix in stem X.

Chapter 6: Stem X

6.1 Goal of the chapter

In the previous chapter I argued that stem IV contains an Actor argument and that roots combine with this stem to create a variety of verbs in which the subject instigates an event. I also argued in chapter 4 that the function of the reflexive /t/ affix is to create an internally-oriented event description by contributing a fused Initiator and Endpoint to the structure of the verb. I have now established two factors which play a role in building verb meaning: reflexivization and provision of a structural Actor argument. My goal in this chapter on stem X is to illustrate how these two factors overlap to create verbs describing internally-oriented events with Actor subjects.

I begin the chapter by illustrating the structure of stem X, and then present data to show the different types of verb that are produced in that stem, beginning with those in which the subject is also a beneficiary. I then discuss stative verbs formed from roots that lexicalize permanent states. Here the Actor brings the state about by having some inherent property. Following this I examine verbs where the subject is both Actor and recipient; Actor and goal; then verbs construing actions on the self; and finally verbs describing mental events. I end the chapter with a summary of the main points of this chapter and of part III of the dissertation.

6.2 The structure of stem X

Stem X consists of two morphemes: an /s/ morpheme, and the reflexive /t/ which is also present in stems V, VI and VIII. The function of the /s/ affix is the same as that of the glottal stop in stem IV. Indeed, MacDonald (1963) notes that stem IV is formed with /s/ in the older Eastern Semitic languages Accadian and Ugaritic, and speculates that this may have been the case in Arabic at one time. In any case, it is uncontroversial in Semitic studies that stem X is the reflexive of stem IV. This being the case, it is unsurprising that stem IV and stem X often produce verbs which enter into an argument alternation, with stem IV yielding an externally caused change-of-state verb, and stem X yielding an internally caused change-of-state verb where the two participant roles are merged. Two examples are given below.

Root	Stem IV	Stem X
√ʕdd	ʔaʕadda ‘to prepare’ trns	ʔistaʕadda ‘to prepare’ int
√yqḏ	ʔayqaḍa ‘to wake up’ trns	ʔistayqaḍa ‘to wake up’ int

Table 40: Stem X verbs that alternate with stem IV.

Many stem X verbs show little or no correspondence to stem IV verbs formed from the same root however, as the following examples illustrate.

Root	Stem IV	Stem X
√ḥsn	ʔaḥsana ‘to do well’ int/trns	ʔistaḥsana ‘to consider good’ tnrs
√ʤmʕ	ʔaʤmaʕa ‘to achieve consensus’ int	ʔistaʤmaʕa ‘to gather (strength etc)’ trns
√ḥqq	ʔaḥaqqa ‘to tell the truth’ int	ʔistaḥaqqa ‘to deserve’ trns
√ǧrq	ʔaǧraqa ‘to drown; sink’ trns	ʔistaǧraqa ‘to last’ trns
√ṭwʕ	ʔaṭaaʕa ‘to obey’ trns	ʔistaṭaaʕa ‘to be able to’ trns

Table 41: Stem X verbs that do not correspond to stem IV.

The above examples make it clear that a stem X verb is not simply the intransitive member of an alternating pair. However, this is explainable because, as established in chapter 4, reflexivization is not carried out on some unreflexivized verb, but takes place within a verb. That is, in the same way that stem VIII verbs are not derived from stem I verbs, but are created when the root combines directly with the /t/ affix, so stem X verbs are not derived from stem IV verbs. Instead, the root combines with an Actor subject in stem IV, and with an Actor subject and a reflexive affix in stem X. There is therefore no reason why a stem X verb should always have a stem IV counterpart. The presence of both an Actor subject and a reflexive affix allows stem X to produce verbs representing one of the two looping relations shown below.

Figure 8: Looping relations with Actor arguments.

I have already shown that such relations may also be represented by stem VIII. The difference between stem VIII and stem X is the role of the subject. This is not to suggest that stem VIII does not produce verbs with Actor subjects, but a stem VIII verb may also have an Undergoer subject, as seen in stem VIII *ʔiktamala* 'to become complete'. Thus stem VIII provides a reflexivized structure, while stem X provides a reflexivized structure with an Actor subject. Roots contribute meaning to each structure.

For example, the root √kʃf produces transitive stem I *kaʃafa* 'to uncover; to reveal'. This is an externally-caused event that begins with the subject and ends with the object. When the root combines with the /t/ affix in stem VIII, it yields *ʔiktaʃafa* 'to discover'. This verb represents a looping relation where the subject uncovers the object, and this has a knock-on effect for the subject, who undergoes a change of state in the sense that he/she comes to know something new. The role of the subject has therefore both an Actor and an Undergoer flavour. The same root combines with stem X to produce transitive *ʔistakʃafa* 'to explore'. Here, the root contributes meaning to a structure containing an Actor argument. The result is a verb where the subject acts in relation to the object, but the object is not affected as a result of this action. The affected entity here is the subject, which, like the subject of *ʔiktaʃafa* 'to discover' also receives some kind of knowledge as a result of the event. Unlike with the stem VIII verb however, the subject is construed as actively causing this knowledge to come to it, rather than passively receiving such information. Thus the difference between *discovering a country* and *exploring a country* is that the first may happen by chance, but the second is a deliberate act requiring agency.

6.3 TYPES OF STEM X VERB

The combination of a root with an Actor subject and a reflexive affix in stem X creates a variety of verbs describing different types of looping relation. In this section I explore some of these in greater detail.

6.3.1 Subject as Beneficiary

My focus in this section is stem X verbs in which the subject stands in a relation with another event participant, and is a beneficiary or a recipient which represents the Endpoint of that relation. Some examples are shown in the table below.

Root	Stem I	Stem IV	Stem X
√xdm	xadama ‘to serve’ trns	---	ʔistaxdama ‘to use’ trns
√ʕml	ʕamila ‘to work’ int	ʔaʕmala ‘to put to work’ trns	ʔistaʕmala ‘to use’ trns
√hwy	hawiya ‘to love’ trns	ʔahwaa ‘to aspire to’ obl	ʔistahwaa ‘to seduce; enchant; entrance’ trns
√rḍy	raḍiya ‘to be pleased with’ obl	ʔarḍaa ‘to please’ trns	ʔistarḍaa ‘to ingratiate oneself with’ trns

Table 42: Stem X verbs encoding a beneficiary.

Roots which lexicalize concepts that typically involve a beneficiary combine with stem X to produce verbs in which the subject is both an Actor that causes another entity to carry out an action, while also being the beneficiary of that action. For example, the root √xdm produces the transitive stem I verb *xadama* ‘to serve’. When this root plugs into stem X, the resulting transitive verb, *ʔistaxdama*, means ‘to use’. The structure of this verb is as shown.

(1) [x CAUSE y serve x]

It is important to reiterate here the point made in chapter 3 regarding combinations of concepts within word boundaries and conceptual closeness. Of course this verb is not equal to the phrase ‘x cause y to serve x’, but these concepts are present in the meaning of this verb. The subject acts. The object performs some kind of service as a result. The subject benefits. These elements of meaning are lumped together and construed as one event, and the linguistic items that represent them are combined within the bounds of a single word. There is a higher degree of conceptual closeness between the causing event and the caused event than there is in the phrase ‘x causes y to serve x’, and there is obviously a high degree of conceptual closeness between the causer and the beneficiary, to the extent that they are inseparable. This is reflected in the degree of linguistic closeness between the linguistic items that represent these concepts.

Root senses which may yield this type of verb are not limited to those which inherently imply a beneficiary argument however. The root √ʕml produces *ʕamila* ‘to work’ in stem I, and also produces a stem X verb meaning ‘to use’. Again here the root plugs into stem X producing a verb which construes a looping relation where the subject both brings about and benefits from an event:

(2) [x CAUSE y work for x]

Two slightly different examples, from roots which lexicalize emotional states, involve caused changes of state, rather than caused actions. With the transitive stem X verbs *ʔistahwaa* 'to seduce; enchant; entrance', and *ʔistarḍaa* 'to ingratiate oneself', the subject causes the object to undergo a change of state which is directed back at the subject.

The semantic structure of these stem X verbs consists of a structural Actor argument which represents the start point of the event described. This argument instigates an event in which another participant comes to be in a positive emotional state that is directed towards another party. Without the /t/ affix, there would be nothing in the semantic structure of the verb specifying who or what this other party is. The function of the /t/ affix here then is to identify this 'loved' party as the Actor argument itself. This is illustrated below.

(3) ʔistahwaa 'to enchant' → [x CAUSE y *love* x]

ʔistarḍaa 'to engratiate oneself' → [x CAUSE y *be pleased with* x]

Further examples of stem X verbs in which the subject brings about and benefits from the action (or state) encoded in the root are given below.

Root	**Stem I**	**Stem X**
√qḍy	qaḍaa 'to act as judge'	ʔistaqḍaa 'to appoint as ones judge'
√ʕbd	ʕabada 'to serve; to worship'	ʔistaʕbada 'to enslave; to enthrall'
√xlf	xalafa 'to succeed (someone)'	ʔistaxlafa 'to appoint as ones successor'

Table 43: Further stem X beneficiary verbs .

All three examples describe events where the subject causes the object to be or do something *in relation to the subject*.

6.3.2 Stative verbs with Actor subjects

Some verbs formed in stem X appear to be stative. Three examples are given in the table below.

Root	Stem I	Stem IV	Stem X
√ṭwʕ	ṭaaʕa ‘to be obedient’ obl	ʔaṭaaʕa ‘to obey’ trns	ʔistaṭaaʕa ‘to be able to’ trns
√hqq	haqqa ‘to be right; correct’ int	ʔaḥaqqa ‘to tell the truth’ int	ʔistaḥaqqa ‘to deserve’ trns
√wdʒb	wadʒaba ‘to be obligatory’ obl	ʔawdʒaba ‘to make obligatory trns	ʔistawdʒaba ‘to require; to warrant’ trns

Table 44: Stem X stative verbs.

These stem X verbs appear to be unrelated to their stem IV counterparts. The difference in meaning results from the presence of the reflexive /t/, which creates a structure that allows different aspects of root meaning to surface. The root √ṭwʕ encodes abstract notions of *compliance* or *malleability*, and being *in-the-control-of*. It lexicalizes a state in stem I, and in an adjectival environment. In addition it produces a noun roughly translatable as *in-the-power-of*, shown in context below.

Root	Stem I	Adjective	Noun
√ṭwʕ	*ṭaaʕa* ‘to be compliant’	*ṭayyiʕ* ‘obedient; compliant’	*ṭawʕ* ‘in the control of; beck (as in beck and call)’

Table 45: The root √ṭwʕ.

(4) ثورة الاتصالات وضعت طوع يديه عشرات الاختيارات[13]

θawrat al-ittiṣaalaat waḍaʕat **ṭawʕ** yaday-hi ʕaʃaraat al-ixtiyaaraat
revolution def.communications put.3fsg in-control-of hands-his tens def.choices
‘The communications revolution put tens of choices within his control’

عندما تجدهم طوع يديك تنهب بهم القوة والجاه![14]

ʕindamaa tadʒidu-hum ṭawʕ yaday-ka tanhab bi-him al-qawwa
when find.2msg-them at-control-of hand-your seize with-them def. power
‘When they are under your control, use them to seize power’

I showed in the previous chapter that this type of stative root produces stem IV verbs that are either causative or active. In the stem IV verb *ʔaṭaaʕa* ‘to obey’, the subject is interpreted as acting. That is, the root lexicalizes the permanent property of *being obedient*, and this quality is

[13] BYU: Hayat97 — reference: GEN1997:13681
[14] BYU: MahfouzChildren3:57:47

activated in the stem IV verb, when the subject acts obediently. With the addition of the reflexive /t/ affix in stem X however, the subject is interpreted as causing, and a different aspect of root meaning surfaces, creating the following structure.

(5) [x CAUSE y <be in-control-of> x]

It is the *in the control of* meaning of the root that appears to be at work in the stem X verb *ʔistaṭaaʕa* 'to able to'. The subject argument of this verb causes the direct object of the verb to be *in the control of* the argument represented by the /t/ affix, which is harmonized with the subject through reflexivization. The subject, by virtue of having some property or quality, thus causes the object of the verb to be within its control or capability. This structure is then interpreted to produce *be able to*. It is this internal semantic structure of the verb that explains why it may take the direct object 'everything' in the example below.

(6) [15] الله يستطيع كل شيء

allahu yastaṭiiʕu kulla ʃayʔ
God be able to.3msg every thing
'God can do everything'

In this way a structure with an Actor subject can produce an apparently stative verb. As stated in the previous chapter, the Actor argument is a broad term that represents the entity responsible for bringing an event (or stative situation) about. This may be through action, or it may be through having some inherent quality. The idea that a property or quality of the subject can cause a state to obtain also explains the behavior of the root √ḥqq in stem X, where it creates transitive *ʔistahaqqa* 'to deserve'. This root encompasses the notions *truth* and *right.* It yields the stem I verb *ḥaqqa* 'to be right or just'. The stem X *ʔistaḥaqqa* 'to deserve' verb consists of an Actor that, again because of some property or some previous action, causes the direct object of the verb to be right or just, not in general, but for the argument represented by the /t/ affix, which refers back to the Actor itself:

[15] *www.lifechangingtruth.org/Arabic/Articles/R_Ghabbour/Job.htm*

(7) [x CAUSE y be just for x]

Thus a root combines with stem X where it is provided with an Actor subject which also has some other role. The nature of this role is open to interpretation depending on the root, and may not always correspond to rigid notions of what a beneficiary is. This is especially true of the third example in the table above. The root √wjb yields a stem I verb meaning *to be necessary* or *to be an obligation*, and the causative stem IV verb formed from this root means *to make obligatory*. The stem I verb therefore construes an inherent property which has consequences for another party. That is, whatever is obligatory is obligatory *for someone*. A second party that absorbs the obligation is implied therefore, and may be considered an Endpoint to the extent that the state lexicalized in the root is oriented towards this second party.

When this root plugs in to stem IV, the result is that the subject causes the object to be obligatory, but the object is not the Endpoint of the event, as shown.

(8) اوجبت الفقرة الخامسة على كل جانب حماية البيئة[16]

ʔawʤabat al-faqra al-xaamisa ʔala kull ʤaanib ḥimaayat
makes obligatory.fsg def.paragraph def.fifth. upon every party protection

al-biiʔa
def. environment.

'The fifth paragraph obliges every party to protect the environment'

The stem IV verb therefore construes an event in which an Actor brings it about that something is necessary or obligatory, and a third participant is affected by this. That is, the object of the stem IV verb is made necessary *for someone*. This *someone* represents the end point of the event. Thus the event construed by the stem IV verb is externally oriented. The same root yields the stem X verb *ʔistawjaba* 'to warrant; to deserve; to necessitate' and this also clearly encodes the notion of *obligation*, but without an effected entity that becomes bound to do something as a result.

[16] BYU: Hayat97 — reference: BUS1997:22403

(9) الأمر كله لا يستوجب هذه القسوة [17]

al-ʔamr kullu-hu laa yastawʤib haði il-qaswa
def.matter all-it no warrant.3msg this def. harshness
'The matter does not warrant this harsh behaviour'

Whereas the stem IV verb makes an action necessary *for someone*, the stem X verb makes an action necessary in general. The endpoint which is present in the stem IV verb is therefore missing from the stem X verb, which encodes a situation in which the subject makes something necessary, but also represents the endpoint of the event. This is achieved through the reflexivization of the Actor and with the Endpoint of the event, as shown.

(10) [x CAUSE y obligatory x]

When the root combines with stem X it is placed into a structure that constrains the meaning it may produce. The obligation encoded in the root is brought about by the Actor subject, and the entity that is obligatory is realized as the object, but the endpoint of the event must also be its start point, and this places a restriction on how the root may be interpreted, preventing an interpretation in which an external party is obliged to do something.

6.3.3 Subject as Recipient

In the previous chapter I argued that one type of causative stem IV verb encodes transfer or provision of one entity to another. The structure for this type of stem IV verb is reproduced below.

(11) [x CAUSE y to z]

This same structure is reflexivized in stem X where the subject either obtains, or attempts to obtain, whatever entity concept is contributed by root. In stem X verbs where the root provides

[17] Munif (2008) p.334

information about the thing that is transferred, the recipient argument is harmonized with the subject argument. Examples of this type of verb are given below.

Root	Nominal	Stem X
√ʕwn	ʕawn ‘help’	ʔistaʕaana ‘to seek or get help from’ obl
√ʔðn	ʔiðn ‘permission’	ʔistaʔðana ‘to ask permission; to excuse oneself’ int
√ǧwθ	ǧayθ ‘aid; succor’	ʔistaǧaaθa ‘to seek aid; ask for help’ obl
√rwḥ	raaḥa ‘comfort’	ʔistaraaḥa ‘to relax; take a break’ int
√fyd	faaʔida ‘benefit’	ʔistafaada ‘to benefit; make use of’ obl

Table 46: Stem X verbs with a recipient subject.

These stem X verbs may be represented by the following structure, where the root contributes information about what is transferred or provided to the subject.

(12) [x CAUSE <thing> to x]

For example, the root √ʕwn produces the nominal *ʕawn* ‘help; assistance’. There is no stem I verb, but the root produces a verb in both stem III, *ʕaawana* ‘to help or assist’, and stem IV, *ʔaʕaana* ‘to help or assist’, both of which take a direct object. In line with the analysis developed in the previous chapter, the stem IV verb has the following structure.

(13) [x CAUSE <assistance> to y]

The stem X verb formed from the same root, *ʔistaʕaana*, takes an indirect object and may mean ‘to ask for help’, or ‘to get help from’. The causation in the stem X verb here may be interpreted as completed or attempted causation depending on the context (after Jackendoff, 1990). In each case, the subject initiates an event in which he or she is also the recipient of the entity contributed by the root.

(14) استعان بنعيم مرتين من أجل كلمات [18]

ʔistaʕaana bi-naʕiim marratayn min ʔaǧl kalimaat

[18] Munif (2008) p.324

Sought help.3msg from-naim twice for sake words
'He asked Naim twice for assistance with (remembering) words'

This type of stem X verb is formed when a root that lexicalizes a thing combines with the stem and receives a structural subject and another argument that is harmonized with that subject through reflexivization. The resulting structure is interpreted as a verb in which the subject seeks or requests whatever the root encodes. With other roots that lexicalize events the interpretation is different. In the next section I discuss verbs where the subject is interpreted as Actor and Goal.

6.3.4 Subject as Goal

Some roots lexicalize concepts which involve location in one way or another. These roots produce stem X verbs where the subject is interpreted as both an Actor and a Goal argument. With this type of verb the subject causes another entity either to move towards, enter, or stay with, the subject. The table below provides examples.

Root	Stem I	Stem IV	Stem X
√xrʤ	xaraʤa 'to come out; exit' obl	ʔaxraʤa 'to take out; bring out' trns	ʔistaxraʤa 'to extract' trns
√ǧrq	ǧariqa 'to drown' int	ʔaǧraqa 'to drown' trns	ʔistaǧraqa 'to last' trns
√ʕwd	ʕaada 'to return' int	ʔaʕaada 'to return' trns	ʔistaʕaada 'to reclaim' trns
√bqy	baqiya 'to stay; remain' int	ʔabqaa 'to leave something somewhere' trns	ʔistabqaa 'to keep back' trns
√ʤmʕ	ʤamaʕa 'to gather; to combine' trns	ʔaʤmaʕa 'to achieve consensus' obl	ʔistaʤmaʕa 'to gather (strength etc.) trns
√dʕw	daʕaa 'to invite; call on someone to do something' trns	____	ʔistadaʕaa 'to summon' trns

Table 47: Stem X verbs where the object moves towards or stays with the subject.

The root √xrʤ produces xaraʤa 'to come out; to exit' in stem I. This concept is causativized in both stem IV and stem X. What differentiates the transitive stem IV verb *ʔaxraʤa* 'to remove; to bring out' from the transitive stem X verb *ʔistaxraʤa* 'to extract' is that the stem IV verb does not necessarily specify that the causee moves towards the causer, or enters his or her possession, whereas the stem X verb does. The action of the stem IV verb terminates with the causee, whereas the action of the stem X verb terminates with the subject. The structure for each verb is shown below.

(15) ʔaxraʤa ‘to take out; bring out’: [x CAUSE y go/come out]

ʔistaxraʤa ‘to extract’: [x CAUSE y come out to x]

In all the example below, the stem IV verb construes an event in which the subject causes the object to come out, but this object does not necessarily enter the possession of the subject, and it therefore does not undergo a transfer of ownership:

(16) **اخرج الزيت** من الثلاجة [19]

ʔaxraʤa al-zayt min aθ-θallaaʤa
get out.3msg def.oil from def.fridge
‘He got the oil out of the fridge’

In contrast, the stem X verb in the examples below does encode the object entering the possession of the subject. In the first example, the extraction of the oil from the sesame seeds necessarily involves the oil leaving the seeds in the direction of the subject, who comes to then possess the oil.

(17) **استخرج الزيت** من السمسم[20]

ʔistaxraʤa al-zayt min as-simsim
Extracted.3msg def.oil from def.sesame
‘He extracted the oil from the sesame seeds’

The stem X verb therefore consists of an additional endpoint which is not present in stem IV, and this is reflexivized with the subject. In this case the endpoint is interpreted as a Goal argument. This is true for a variety of stem X verbs which construe events in which the subject causes the object to move towards or enter the subject. The root √ğrq produces the intransitive stem I verb *ğariqa* ‘to drown; to sink’ that describes an event in which an entity becomes immersed. The stem X verb formed from this root, *ʔistağraqa* ‘to last’ describes an event in

[19] www.mwadah.com/t43678
[20] *www.chefs4arab.com/showthread.php?t=209 – Egypt*

which the subject uses up or consumes the object. That is, the object becomes immersed in, or is taken in by, the subject. Two examples make this clear.

(18) الطريق استغرقت سبعة أيام[21]

aṭ-ṭariiq ʔistağraqat sabʕat ʔayyaam
def.road took up.3fsg seven days
'The journey took seven days'

اللحظة الأخيرة التي استغرقتها نظراته الواسعة[22]

al-laḥḍa al-ʔaxiira allatii istağraqat-ha naḍaraatu-hu al-waasiʕa
def.moment def.last which took in.3fg-it gazes-his def.wide
'The last moment that his sweeping gazes took in'

Whereas the stem IV verb from this root simply means 'to drown, sink or immerse something', the stem X verb consists of an Actor argument that immerses another entity in something, and that something is the Actor itself. In the same vein, the stem X verb *ʔistaʕaada* 'to regain; to reclaim' in the example below consists of an Actor argument harmonized with the goal argument of the root, which yields the verb ʕaada 'to return' in stem I.

(19) بدأ يستعيد صحته [23]

badaʔa yastaʕiid ṣiḥḥata-hu
began.3msg regain.3msg health-his
'He began to regain his health'

A similar example comes from root √bqy, which produces *baqiya* 'to stay' in stem I. The stem X verb *ʔistabqaa* 'to keep back; to make someone stay', construes an event where an Actor causes another event participant to stay with him or her. Again here then, the subject represents both the start point and end point of the event.

[21] Munif (2008) p.174
[22] Munif (2008) p.308
[23] Munif (2008) p.387

(20) محاولات دحام في أن يستبقي نعيم على العشاء [24]

muḥaawalaat daḥaam fii ʔan yastabqiya naʕiim ʔala al-ʕaʃaaʔ

attempts Dahaam to that make stay.3msg naim at def.dinner

'Dahaam's attempts to get Naim to stay at dinner'

These stem X verbs appear to be derived from their stem I counterparts, but two further examples illustrate that stem I is just one manifestation of the root, and that the root remains free to enter into combination with other stems and yield other meanings. The root √dʕw yields the transitive stem I verb *daʕaa* 'to invite; to call on someone to do something'. If this stem I verb represented *the meaning* of the root, this fixed root meaning would enter stem X, receive a structural Actor subject and some other argument reflexivized with it, and create some bizarre meaning whereby the Actor subject causes another participant to call on a third participant to do something in relation to the Actor subject. This is not what happens. In the transitive stem X verb formed from this root, *ʔistadʕaa* 'to summon', the subject calls the object to him or her. Thus whereas the root lexicalizes an event in which one participant attempts to cause another to do something, the stem X verbalization represents an event participant attempting to cause another to come to him or her. This is entirely in line with the structure that I have proposed for stem X. The root lexicalizes one type of event, but it may combine with morphemes which determine that a verb will describe a different type of event and contribute meaning accordingly. Thus these morphemes do not add to some fixed concept represented by the root, but provide a structure which a root then flavours.

A similar example comes from the root √ʤmʕ, which yields the transitive stem I verb *ʤamaʕa* 'to gather; to combine; to bring together'. This root already lexicalizes an externally caused event, but this is not what the root *means*. In stem X *ʔistaʤmaʕa* 'to gather', which takes objects like *strength*, it contributes aspects of its meaning to a structure consisting of an Actor argument and a reflexivize marker. The result is a verb with a meaning similar to that realized in stem I, but with the additional element that the participant who brings the event about is also the endpoint of the event, which is interpreted as a type of goal in this case.

[24] Munif (2008) p.202

(21) [25] استجمعت إرادتها كلها

ʔistaʤmaʕat ʔiraadata-ha kulla-ha
gathered.3fsg will-her all-it
'She gathered all her will'

The difference between the stem I and stem X verbs formed from this root is simply that the subject has a dual role in stem X.

6.3.5 Actions on the self

Another function of the stem X template is to produce a verb with an Actor argument that also undergoes the action that it initiates. This type of verb is intransitive, and represents the first type of looping relation shown in section 6.2, in which an Actor represents the Initiator and Endpoint of a relation that does not encompass any other event participants. A number of actions in which the initiator acts on his or her own body are construed through stem X verbs. The root √dwr, for example, produces the stem I verb *daara* 'to turn; revolve; go round'. This is an event like *run*, in which there is an exertion of force, but this force does not terminate with another entity, and there is therefore no Endpoint. Following Kemmer (1993), such an event may be represented as shown.

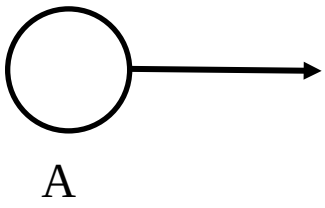

Figure 9: A one participant event.

An example of this stem I verb in context is given below.

[25] Munif (2008) p.132

(22) كان يدور مرة راكبا ومرة راجلا [26]

kaana yaduuru marratan raakiban wa marratan raajilan
used to.3msg go round.3msg once riding and once on foot
'He used to go round once riding and once on foot'

Stem IV provides this root with an Actor subject, allowing the creation of a causative verb, transitive *ʔadaara* 'to turn'. This verb describes an externally-oriented event in which one participant affects another, and may be represented as shown:

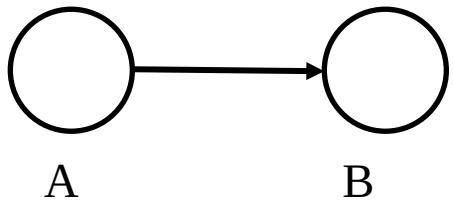

Figure 10: An externally oriented event.

The stem IV verb encodes two participants, and one causes the other to be re-oriented. An example is given below.

(23) أدار ظهره [27]

ʔadaara ðahra-hu
turned.3msg back-his
'He turned his back'

Whereas the root combines with an Actor subject in stem IV to describe an externally-oriented event, it combines with both an Actor subject and a reflexive morpheme in Stem X. This results in a verb describing an event that begins and terminates with an Actor subject, as shown:

[26] Munif (2008) p.145
[27] Munif (2008) p. 150

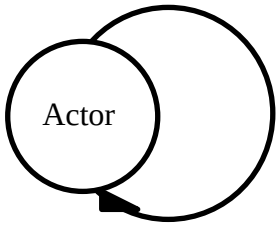

Figure 11: An event that begins and terminates with an Actor subject.

The intransitive stem X verb *ʔistadaara* ‘to turn’, conveys an event in which the subject both initiates and undergoes a turning action. An example is given below.

(24) استدار حتى أصبح يواجه القوم [28]

ʔistadaara ḥata ʔaṣbaḥa yuwaaʤih al-qawm
turned.3msg until became.3msg face.3mg def.tribe
‘He turned until he faced the tribe’

Thus the root lexicalizes a one-participant action. When it combines with an Actor subject it comes to describe an externally caused event, and when it combines with an Actor subject and a reflexive morpheme, it describes an internally caused event. Again here, the morphemes set limits on the type of event a verb may describe, and the root contributes meaning with these limits, giving the verb its specific flavour. A number of one-participant stative roots enter combine with stem X to produce verbs describing internally caused events. Examples are given below.

Root	Adjective	Stem IV	Stem X
√rsl	rasl ‘long and flowing’	ʔarsala ‘to let loose’ (said of hair or tears)	ʔistarsala ‘to let oneself go’
√yqẓ	yaquẓ ‘awake; alert’	ʔayqaẓa ‘to wake up’ trns	ʔistayqaẓa ‘to wake up’ int
√ʕdd	___	ʔaʕadda ‘to prepare’ trns	ʔistaʕadda ‘to get ready’ int

Table 48: Stem X verbs describing internally caused events.

[28] Munif (2008) p.323

A similar type of event which is both caused and undergone by the subject is that of mental events. These are the topic of the next section.

6.3.6 Mental events

The structure of the stem X template also produces verbs that construe mental events in which the Actor attributes a state to the object of the verb. Because the /t/ affix identifies the Actor as also being the entity affected by the event, the possibility of the object actually undergoing a change of state is ruled out. Instead, the event takes place in the mind of the verbal subject, who initiates a cognitive process directed towards a second participant, and forms an opinion or an impression of it, a process which has no effect on that participant itself. Some examples are given below.

Root	**Adjective**	**Stem X**
√ğrb	ğariib 'strange'	ʔistağraba 'to find strange' $_{trns}$
√bʕd	baʕiid 'far'	ʔistabʕada 'to consider unlikely' $_{trns}$
√ḥsn	ḥasan 'good'	ʔistaḥsana 'to consider good' $_{trns}$
√ʤwd	ʤayyid 'good'	ʔistaʤaada 'to consider good' $_{trns}$
√xff	xafiif 'light'	ʔistaxaffa 'to scorn; consider light' $_{trns}$
√θql	θaqiil 'heavy'	ʔistaθqala 'find heavy; burdensome' $_{trns}$

Table 49: Stem X verbs describing mental events.

For each example above, the stem X template remains constant. A root combines with the Actor subject and the reflexive morpheme which constitute the stem, to create a description of an internally oriented event in which an Actor stands in a relation with a second participant, and also represents the entity affected by that relation. The semantic structure of this type of mental event verb may be represented as shown below.

(25) [x $CAUSE_{cog}$ y BE <property> for/at x]

This structure contains cognitive causation, which is a natural consequence of the presence of the reflexive morpheme that prevents a type of externally-oriented causation as this would require a separate Initiator and Endpoint, one to initiate the cause, and the other to absorb the effect. Thus this structure captures the fact that one event participant causes a property like

good or *strange* to obtain of another participant, while leaving this second participant unaffected, with the entire event taking place in the mind of the Actor subject.

6.4 SUMMARY

In this chapter I have argued that stem X produces verbs describing internally-oriented events with an Actor subject which represents both the Initiator and the Endpoint of a relation. A root combines directly with the Actor subject and the reflexive affix present in the stem, and contributes meaning to such a structure. The types of verb created in stem X describe events in which the subject causes another event participant to act and benefits from that action; where the subject causes a second event participant to have a certain disposition towards it; where the subject causes something to come to it; and where the subject directs his or her attention towards something and attributes a certain characteristic to that thing in his or her own mind.

I have now presented two of the three parameters along which structure contributes to verb meaning in Arabic. The provision of an Actor subject does not only create causative verbs, but it also allows stative roots to yield new active meanings, just as it allows roots that lexicalize things to produce verbs. The presence of a reflexivize marker in such a structure with an Actor subject represents the overlapping of these two phenomena, and this allows roots to create a variety of verbs in which action begins and ends with an active subject. Another way in which morphemes determine the type of event that a verb may describe is through the specification of number. This topic is discussed in part IV.

Part IV: Number

Chapter 7: Stem II

7.1 Goal of the chapter

Part IV of this dissertation is concerned with the third way in which structure builds verb meaning in Arabic: number. Arabic makes a distinction between singular, dual, and plural in both the nominal system and in verb conjugation, and I argue that this distinction is also present in the stems that create verb meaning. Stem II and stem V provide a structural environment in which a root creates a verb consisting of plural event phases. This type of verb is what Newman (1990) terms **pluractional**. Stem III and stem VI produce a number of what I term **dual** verbs. These stems provide an environment in which certain roots yield verbs consisting of two relations, which are construed as one event.

My goal in this chapter is to determine the structural environment that stem II provides for a root. I argue that the stem consists of both an Actor argument and a marker of pluractionality. The presence of these two components leads to two different kinds of stem II verb. A root combines with the stem to create a verb with an active subject which is usually interpreted as causative. This enables the stem to create a variety of verbs from roots which lexicalize things and states. The pluractional marker conditions the meaning that a root may yield by requiring it to create multiple phases of action. These phases may be distributed across time or across space. These two functions of stem II overlap in many cases, creating verbs of continuous causation which consist of repeated cycles of cause and effect.

I begin by illustrating the form of the stem, and by providing a selection of the types of verb that the stem creates. I then discuss stem II verbs with Actor subjects (which are not pluractional), where I show that roots that lexicalize things, certain property states, and events which are undergone, produce active verbs in that stem. I then introduce the concept of pluractionality, before presenting the different types of pluractional verb formed in stem II.

7.2 THE FORM OF STEM II

Stem II is distinguished from stem I by the presence of the *shadda*, a diacritic that marks gemination of the second root consonant. An example is given below with the root √qṭʕ.

(1) Stem II pattern: $C_1aC_2C_2aC_3a$

Example: √qṭʕ → $C_1aC_2C_2aC_3a$ → qaṭṭaʕa 'to chop up'

Cross linguistically, gemination produces intensive or iterative verbs, and Arabic is no exception. However, only the first two verbs in the table below may be considered as intensive (or iterative), while the others do not have this quality.

Root	**Stem I**	**Stem II**
√qtl	qatala 'to kill' trns	qattala 'to massacre' trns
√qṭʕ	qaṭaʕa 'to sever' trns	qaṭṭaʕa 'to chop up' trns
√wqʕ	waqaʕa 'to occur; to fall' int	waqqaʕa 'to drop; trip up' trns
√ḥdθ	ḥadaθa 'to happen' int	haddaθa 'to talk to' trns
√xṣṣ	xaṣṣa 'to concern; relate to' trns	xaṣṣaṣa 'to designate' trns
√hqq	haqqa 'to be right; true' int	haqqaqa 'to achieve' trns

Table 50: Examples of stem II verbs .

I discuss verbs with no intensive reading first, before presenting an analysis of intensive verbs, which I argue are pluractional.

7.3 VERBS WITH ACTOR SUBJECTS

In chapter 2, I argued that stem I represents a simple verbal environment that allows the root to express what it lexicalizes. I also illustrated that stem I verbs may have Actor or Undergoer subjects, and may be externally or internally oriented. This contrasts with stem IV, where I have argued that the stem provides a structural Actor argument which is interpreted as *causing*, *doing*, *going* and so on, depending on the root that combines with it. My aim in this section is to show that stem II also contains an Actor argument. This allows a root to combine with the stem to produce a verb with an active subject. The presence of an Actor argument allows the verbalization of roots that lexicalize things and states. In addition, roots which yield verbs with Undergoer subjects in stem I may produce stem II verbs with Actor subjects. These may be causative verbs, or they may simply be active. Given that both stem II and stem IV have Actor subjects, a natural question to ask is how they differ. One answer to this question is that

stem II is also pluractional, and I will illustrate in section 7.4 that this does go some way towards explaining the difference between the stems with certain roots. It should also be noted that stem IV has virtually disappeared in many if not all spoken dialects of Arabic (if it was ever present), where the function that it plays in formal Arabic is taken on by stem II. Doron's (2003) analysis of the corresponding Hebrew stems, in which she argues that one is causative while the other is simply active, does not appear to apply to the same degree in Arabic, as both stems produce a variety of verbs which are active (but not causative), and both produce causatives. I will not comment further on this issue here, but note the question as a topic for further research. I now turn to the different types of active verb created in stem II.

7.3.1 Causative verbs

Like stem IV, stem II contains an Actor argument which is interpreted as *causing* something or *doing* something depending on the root. Most roots that lexicalize one-participant events produce causative verbs when they combine with stem II. Examples are given below.

Root	Stem I	Stem II
√nzl	nazila 'to descend'	nazzala 'to take down; to lower' trns
√gyb	ğaaba 'to be or become absent'	gayyaba 'to make oblivious' trns
√qrr	qarra 'to be settled' (said of a matter)	qarrara 'to decide' trns
√dmr	damara 'to perish' (not current)	dammara 'to destroy' trns
√mwt	maata 'to die'	mawwata 'to kill' trns

Table 51: Stem II causative verbs.

It is important to restate here that causation is not a fixed concept and may take on many forms. Stem II *qarrara* 'to decide', for example, is an example of cognitive causation in which the subject causes the object to become settled in his or her own head. It is also important to point out that an imperfect correspondence between the meaning yielded by the root in stem I and in stem II occurs partly because stem II is not derived from stem I, but simply places the root in a causative context where it may yield a different, if related, meaning. Thus stem II *dammara* 'to destroy' is formed from the same root as *damara* 'to perish', but it does not produce a verb meaning *cause to perish.* Rather, the root and stem together create a verb meaning *destroy.*

Other stem II causative verbs are created from roots that yield stem I verbs which appear to have active subjects, and may even be viewed as causative.

Root	Stem I	Stem II
√rkb	rakiba ‘to ride; to mount’ $_{trns}$	rakkaba ‘to install; to make ride’ $_{trns}$
√ḥml	ḥamala ‘to carry; to hold’	ḥammala ‘to load; put sth on sth’ $_{ditrns}$
√wld	walada ‘to give birth’	wallada ‘to assist a mother in childbirth’ $_{trns}$

Table 52: Stem II verbs encoding different types of causation.

The stem II verbs formed from these roots encode different types of causation depending on the properties of the root. Stem II *rakkaba* ‘to install; to make ride’ involves successful causation whereby the subject causes the object to be installed, or to ride. The verb *hammala* ‘to load’ may involve physical contact between the subject and the object, where the subject literally causes the object to carry the double object, or it may involve a kind of estimative causation where the double object is a noun like *lawm* ‘blame’ or *masʔuuliyya* ‘responsibility’.

Givon (1976) notes that when the object of causation is capable of deliberateness or control over his or her actions, the type of causation that is possible is demoted from implicative causation, where the causation is successfully carried out, to non-implicative causation, where the causation is not necessarily successful, such as with attempted causation. It is this, he explains, that accounts for the loss of implicative force once the English verb *learn* is causativized to *teach*. Because the subject of *learn* is animate and therefore capable of control, the *cause-to-learn* meaning of *teach* does not necessarily involve successful causation, hence the acceptability of a sentence like *I taught him but he does not know anything*. If the object of causation is an agent therefore, it may retain control, and causation can only be interpreted as attempted causation, because the causer cannot fully assume control over the causee.

It is the inability of the causer to fully control the causee that explains the meaning of stem II *wallada* ‘to assist in childbirth’ (which also has a pluractional meaning to be discussed later), where an external causer argument is unable to take full control over instigating the event. In this case then the type of causation is interpreted as assistance. Regardless of the exact nature of the causation however, the verbs above clearly illustrate that stem II provides the root with a structural argument. Roots that lexicalize property states may also yield causative verbs in this stem, as illustrated below.

Root	Adjective	Stem II causative
√xṣṣ	xaaṣṣ ‘special’	xaṣṣaṣa ‘to designate’ trns
√ʕqm	ʕaqiim ‘sterile’	ʕaqqama ‘to sterilize’ trns
√ʕyn	ʕain ‘notable; prominent’	ʕayyana ‘to specify; to appoint’ trns
√ʃrf	ʃariif ‘honourable’; ʃaraf (n) ‘honour’	ʃarrafa ‘to honour’ trns

Table 53: Stem II verbs from property state roots.

While stem II always has an Actor argument however, the verbs it produces are not always causative. Verbs in which the Actor does something, rather than causes something, are the topic of the next section.

7.3.2 Act vs Cause

The presence of an Actor argument in stem II allows roots that yield stative verbs in stem I to yield active verbs in stem II. This may result in a stem II verb which is not obviously related to the corresponding stem I stative, as shown.

Root	Stem I	Stem II
√ğny	ğaniya ‘to be rich’	ğannaa ‘to sing’
√rḥb	raḥiba ‘to be wide; spacious’	raḥḥaba[29] ‘to welcome’ obl
√mrḍ	mariḍa ‘to become ill’	marraḍa ‘to nurse; to make ill’ trns
√dxn	daxina ‘to be smokey’	daxxana ‘to smoke (a cigar); to cure (a fish)’

Table 54: Active stem II verbs.

Some of these verbs bare a relation to a noun formed from the same root. For example *ğannaa* ‘to sing’ is related to *ʔuğniya* ‘song’. I will discuss this type of verb in the next section, but the point I want to make here is that a root which has the potential to yield a stative verb will do so only in stem I. In stem II the same root will yield an active verb, which consists of the subject carrying out an action, or causing another participant to act, or undergo a change of state. Thus a number of roots which yield stative verbs with Undergoer subjects in stem I produce two types of stem II verb: one causative, the other just active, as illustrated.

[29] Mahmoud Al-Batal (pc) points out that this verb may be interpreted as causative in the sense that the subject makes room for a guest (making his house wide or spacious).

Root	Stem I undergoer	Stem II causative	Stem II active
√ʕlq	ʕaliqa ‘to hang; get stuck’ $_{int}$	ʕallaqa ‘to hang; to suspend’ $_{trns}$	ʕallaqa ‘to comment; remark’ $_{obl}$
√wqʕ	waqaʕa ‘to fall; to happen’$_{int}$	waqqaʕa ‘to drop; to trip up’ $_{trns}$	waqqaʕa ‘to sign’ $_{trns}$
√ḥdθ	ḥadaθa ‘to happen’ $_{int}$ ḥaduθa ‘to be new; recent’$_{int}$	ḥaddaθa ‘to modernize’ $_{trns}$	ḥaddaθa ‘to talk to’ $_{trns}$

Table 55: Stem II verbs with both causative and active meanings.

In establishing that stem II provides an Actor argument that combines with a root to produce an active verb, I have presented some stem II verbs that are related to nouns. I now move on to discuss this type of stem II verb in greater detail.

7.3.3 Verbs from things

A number of roots lexicalize things which appear to be the base for verbs formed in stem II. As discussed in chapter 5, the question of whether denominal verbs actually exist in Arabic is not easily answered. Certainly if a denominal verb involves using a noun as a verb without any change in the phonological and morphological form of that noun then they do not. The important point is that whatever facets of root meaning surface when the root enters a nominal environment also surface when the root appears in stem II. The sense of the root that appears in the noun does not incorporate the notion of participants, and cannot therefore produce a verb in stem I. When this entity concept root combines with stem II it is provided with an Actor subject, and this yields a variety of verbs.

Clark and Clark (1979) classify denominal English verbs according to the role that the incorporated noun plays in the event construed by the verb. Their class of locatum verbs consists of verbs in which the subject causes the object to have the noun *on it*, *in it* or *at it*. The English verb *to blanket* is a good example. With this type of **locatum** verb the parent noun is viewed as being in objective case, while the object of the verb is in locative case. This situation is reversed in a **locative** denominal verb, in which the subject causes the object of the verb to be in, at, or on the noun. Here, the verbal object is in objective case, while the incorporated noun is locative. Thus *to gas the car* is a locatum verb where the parent noun *gas* goes into object of the verb, whereas *to kennel the dog* is a locative verb, where the object of the verb goes into the parent noun *kennel*.

Clearly, the English verbs *blanket*, *gas* and *kennel* are derived from concepts that do not themselves involve participants, and which do not therefore supply any arguments to the structure of the verb. Rather, they fill an argument role in a structure which is created when they are given an active subject and an object. Clark and Clark recognize this. As noted in chapter 5, they observe that the kind of event that a denominal verb may describe will vary according to the arguments present in the structure (p.803):

(2) David tented the blanket
David tented the baby before the storm hit
The marines tented the hillside
David tented near the river

The idea that the verb *tent* can be represented by a single semantic structure is therefore untenable. In light of this, I propose that stem II verbs formed from roots that lexicalize things are, just like all other stem II verbs, created when the root is placed in a certain structure. The stem itself provides an Actor argument and the root combines with this. The table below gives examples of stem II verbs that may be considered locatum verbs, where the subject causes something to go (in one way or another) to the object.

Root	Related Noun	Stem II
√ṣfḥ	ṣafiiḥa ‘sheet (of metal)’	ṣaffaḥa ‘to plate’ trns
√ḥdq	ḥadaqa ‘pupil (of the eye)’	ḥaddaqa ‘to stare at’ obl
√klm	kalima ‘word; speech’ kalaam ‘speech’	kallama ‘to talk to’ trns
√ḥdθ	ḥadiiθ ‘speech; report’	haddaθa ‘to talk to; tell’ trns
√qbl	qubla ‘a kiss’	qabbala ‘to kiss’ trns
√ʔθr	ʔaθr ‘a mark; trace’	ʔaθθara ʔala ‘to influence; effect’ obl
√ʕwd	ʕaada ‘custom’	ʕawwada ‘to accustom’ trns
√ʔss	ʔasaas ‘foundation’	ʔassasa ‘to found’ trns
√ğty	ğiṭaaʔ ‘cover’	ğaṭṭaa ‘to cover’ trns
√ʃkl	ʃakl ‘shape; form’	ʃakkala ‘to form’ trns
√sʕr	siʕr ‘price’	saʕʕara ‘to price’ trns
√rxm	ruxaam ‘marble’	raxxama ‘to marble’ trns
√swr	suur ‘fence’	sawwara ‘to fence’ trns
√ğdw	ğadaaʔ ‘lunch’	ğaddaa ‘to give lunch to’ trns
√ʕʃw	ʕaʃaaʔ ‘dinner’	ʕaʃʃaa ‘to give dinner to’ trns

Table 56: Stem II verbs from roots that lexicalize things.

However, it seems unlikely that a notion as basic as talking to someone would be expressed by a denominal verb, especially if this is taken to mean that *kalima* ‘word’ existed in the language for a period of time and was then verbalized to create *kallama* ‘to talk to’. In addition, the meaning of verbs like *ʃakkala* ‘to form’ and *ʔassasa* ‘to found’ is not really captured by the structure ‘x CAUSE y go to z’, but it is not clear what structure does capture their meaning. If the roots are placed directly in a structure where they are provided with an Actor subject and an object, the need to consider the semantic role of the thing *form* in the verb *form* goes away. The noun and the verb share a root. The root realizes a noun, and when provided with a structural subject also yields a verb. The same applies to the locative verbs below.

Root	Related Noun	Stem II
√sʤl	siʤill ‘record; register’	saʤʤala ‘to record; to register’ $_{trns}$
√wrṭ	warṭa ‘mire’	warraṭa ‘to enmire’ $_{trns}$
√ʃrq	ʃarq ‘east’	ʃarraqa ‘to go east’ $_{int}$ ‘to easternize’ $_{trns}$
√ʕrb	ʕarab ‘Arab’	ʕarraba ‘to Arabize’ $_{trns}$
√ǧrb	ǧarb ‘west’	ǧarraba ‘to go west’ $_{int}$ ‘to westernize’ $_{trns}$

Table 57: Stem II locative verbs.

The roots of these verbs combine with stem II to yield verbs that clearly bear a relation to the nouns formed from the same root, but this does not mean that the verbs are themselves formed from nouns. Thus the meaning of stem II *saʤʤala* ‘to record’ is not limited to events in which something is put in a record, and may describe all kinds of tape recording, video recording and so on. Likewise, the stem II verbs *ʃarraqa* ‘to easternize’ and *ǧarraba* ‘to westernize’ do not encode events in which the subject causes the subject to go East or West, but rather they describe caused changes of state. The adjectives which convey the respective states *eastern* and *western* are formed by affixing the relational marker *iyy* to the relevant nouns: *ʃarqiyy* ‘eastern’; *ǧarbiyy* ‘western’. How does this state make it into the stem II verb? It seems unlikely that the noun *ʃarq* combines with the affix *iyy*, and then with stem II where the affix *iyy* then disappears. If the root just combines with the stem, the need to make such a claim is eliminated.

The table below contains further examples of verbs formed from roots that lexicalize things. If these verbs are derived from nouns, what is the role of the noun in each case? Consider the structures that one would need to propose for these verbs in order to show what meaning the noun contributes.

Root	Related Noun	Stem II
√xym	xayma ‘tent’	xayyama ‘to camp; to descend (silence)’ $_{int}$
√ʤnb	ʤaanib ‘side; aspect’	ʤannaba ‘to spare someone something’ $_{ditrns}$
√sbb	sabab ‘reason; cause’	sabbaba ‘to cause’ $_{trns}$
√ṣwr	ṣuura ‘image; picture’	sawwara ‘to depict; to photograph’ $_{trns}$
√ʤyʃ	ʤayʃ ‘army’	ʤayyaʃa ‘to raise an army’ $_{int}$
√ṣly	ṣalaa ‘prayer’	ṣallaa ‘to pray’ $_{int}$

Table 58: Stem II verbs with no clear role for the corresponding noun.

In sum, an approach in which stem II is viewed as creating denominal verbs often runs into trouble explaining the relation between the verb and the noun from which it is considered to be derived. If, on the other hand, all stem II verbs are viewed as being the result of the direct combination of root and stem, some lack of correspondence between a stem II verb and its related noun is to be expected. The root creates meaning in combination with different grammatical categories. Aspects of its meaning surface when it combines with a nominal template, but it remains free to create new meanings in combination with a verbalizing template that provides a subject argument.

This issue aside, I have now established that stem II contains a structural subject, and I have shown that this may be interpreted as causing something, or as acting. The stem also contains a pluractional marker, and the effect of this on the meaning that a root may yield in combination with the stem is the focus of the remainder of this chapter.

7.4 PLURACTIONALITY

In many stem II verbs the *shadda* (the marker of gemination) serves as a marker of intensification or iterativity. I will argue that notions of intensification, repetition and iterativity in Arabic may be incorporated within a larger concept of verbal plurality or, to use Newman’s (1990) term, **pluractionality**. The argument that the Semitic intensive is an instance of verbal plurality was first put forward by Greenberg (1991), who essentially defines an intensive as a verb that construes repeated action. In this chapter I will adopt the slightly different definition developed by Cusic (1981), and adopted by Wood (2007) in which pluractional verbs (plural verbs) construe events that consist of multiple phases.

In his study of verbal plurality and aspect, Cusic (1981) observes three ways that multiple action may be conceptualized and construed. The first is **plurality of events,** where a single event with an inherent endpoint is repeated on the same occasion, as in *to bite again and again*. The second type of multiple action is **plurality in events,** where a single event itself consists of internal phases. The English verb *to nibble*, for example, describes an event consisting of multiple instances of biting, with each bite representing a phase in the event of *nibbling*. Wood and Garrett (2001) give a second example of this type of plurality in events: the English verb *flutter*, which consists of multiple flaps of a wing. Lastly, Cusic notes that an event consisting of internal phases (like *nibble*) may be repeated on separate occasions, as in *he's always nibbling.* He therefore recognizes three levels or parameters of plurality: plural phases (inside one event, like *nibble*); plural events (inside one occasion, like *bite again and again*) and plural occasions (like *always nibbling*).

Cusic's distinction between plurality *of* events and plurality *in* events is expanded upon by Wood (2007), who uses the terms **event external plurality** for plurality which is comprised of repeated events on the same occasion (like *bite again and again*). This type of plurality is not lexicalized in the verb, that is, the verb *bite* does not itself construe plural phases of action. In contrast, **event internal plurality** is construed by a single verb, which describes a single event consisting of multiple phases (like *nibble*). Wood identifies a class of verbal inflections and derivational morphemes in a number of languages which she asserts affix to verbs to express this kind of event internal plurality. She gives an example from Yurok, a native American language spoken in Northern California, where event internal repetitive action may be construed through partial reduplication (p144).

(3) *sitoh* 'to splinter' ***sit****sitoh* 'to splinter several times'
kwryrh 'to whistle' ***kwry****kwryrh* 'to be whistling'

Wood includes data from Arabic in her study. She analyses three stem II verbs as pluractionals. These are *saffaqa* 'to applaud', where each phase of the event described is one instance of clapping; *qaṭṭafa* 'to pick', which describes multiple phases of picking, and transitive *kassara* 'to break up' where the object undergoes multiple instances of breaking. Just as reduplication marks pluractionality in Yurok, Wood asserts that gemination marks

pluractionality in Arabic. The *shadda* of stem II, then, is considered a marker of pluractionality in Wood's analysis. That is, it creates verbs which consist of multiple phases of action which are lumped together and construed as one event.

It is important to note the parallel here between the effect of reflexivation within word boundaries (in contrast to reflexivation across word boundaries) and the effect of marking plurality within word boundaries rather than with an adverbial like *again and again*. In previous chapters I have illustrated that when two arguments are reflexivized within a verb, this results in the blurring of the distinction between the two participant roles present in the verb, to the point that two distinct event participants are not conceptualized, but rather the verb describes an event which begins and ends with the same participant. In Kemmer's terms, there is a low level of distinguishability of participants in this type of verb. Now, Wood views pluractional verbs as arising from different levels of event segmentation. That is, the things that happen around us are grouped together and conceived of as complex events, or they are distinguished from each other and conceptualized as separate. She notes that a complex sequence of happenings can be viewed as one or multiple events, and that the cognitive process by which humans determine where one event ends and another begins is similar to the process involved in the visual grouping of entities in object perception. She points out that just as objects like *leaves* may be individuated or grouped together and conceptualized as *foliage*, so the components of events may be individualized, like *take steps*, or grouped together, like *walk*.

The level of segmentation with which we view events then is not fixed, and there are no inherent boundaries in the stream of what happens around us. Rather, humans impose divisions on this stream, dividing it into events through a process of grouping and individuation. Thus just as a reflexive marker within a word has a different affect than a word-external full reflexive pronoun, so the incorporation of a pluractional marker within a word has a different affect than the use of a word-external adverbial like *again and again* or *many times*. The difference is that a pluractional verb describes one event consisting of grouped phases, whereas an adverbial like *again and again* pluralizes an individuated event which itself is not plural.

In the context of Arabic stem II verbs, this means that the root is placed in a structural context in which it yields a verb consisting of plural phases, not that it enters a verb stem, creates a verb describing a singular event, and that this is then pluralized. I now present different types of stem II pluractional to illustrate how this occurs.

7.4.1 Stem II pluractionals

I have already given examples of a variety of stem II verbs which do not consist of plural phases, despite the presence of the *shadda* in the stem. Clearly then, this pluractional marker is only effective with certain roots. In the analysis that follows I show that roots which are able to provide a telos, that is, a temporal bound, produce a pluractional verb in stem II.

7.4.1.1. Phases distributed across time

Some stem II pluractionals encode multiple phases distributed across time. The roots in the table below lexicalize caused changes of state. These are telic events, that is, events which have an inherent endpoint. In terms of Vendler's (1967) aktionsart classes most of these stem I verbs are achievements.

Root	**Stem I**	**Stem II**
√qtl	qatala 'to kill' $_{trns}$	qattala 'to massacre' $_{trns}$
√ðbḥ	ðabaḥa 'to butcher' $_{trns}$	ðabbaha 'to massacre' $_{trns}$
√qṭf	qaṭafa 'to pick' $_{trns}$	qaṭṭafa 'to pick many' $_{trns}$
√qṭʕ	qaṭaʕa 'to sever' $_{trns}$	qaṭṭaʕa 'to chop up' $_{trns}$
√ksr	kasara 'to break' $_{trns}$	kassara 'to break up' $_{trns}$

Table 59: Stem II transitive pluractionals.

Because actions like *killing*, *severing*, *breaking* and *picking* have an inherent temporal boundary they are countable, and may therefore be pluralized. Both Dowty (1979) and Cusic (1981) comment on the effect of boundaries on pluralization. A noun like *apple* describes something that has a spatial boundary or edge, and this boundary is maintained in plural *apples*. The individual apples are still recognizable within this plural as each has its own spatial boundary. In contrast, a mass noun like *water* is not countable because it has no fixed spatial boundary. When water is added to water the result is *water*, and no individual components are recognizable. The same phenomenon is found with events. An event that has a temporal boundary may be counted. Dowty (1979, p.60) illustrates this by contrasting the following sentences.

(4) *John discovered the treasure for six weeks
John discovered fleas on the rug for six weeks

English *discover* is an achievement verb. It describes an event which cannot continue indefinitely, hence the unacceptability of the first sentence above. Once the treasure is discovered, the event is over. The presence of the plural object *fleas* in the second sentence allows an interpretation in which the event of discovering is repeated over and over (once for each flea). The number of fleas determines the number of discovering events that take place, but the temporal bound inherent in the verb prevents an interpretation in which only one discovering event occurs. In contrast, a verb like *swim* has no inherent bound (although one may be added) and may continue indefinitely. Thus in the sentence below no recognizable individuated component events may be recognized.

(5) John swam for six hours

The table above shows that roots which yield inherently telic senses (caused changes of state) produce those same senses when they combine with stem II. The object changes state, and entry into the state represent a telos which can be multiplied. These verbs take incremental theme objects which undergo the action carried out multiple times. Other stem II pluractionals are may be intransitive however. Examples are given below.

Root	Stem I	Stem II
√ṣfq	ṣafaqa ‘to clap’ $_{int}$ ‘to slap’ $_{trns}$	ṣaffaqa ‘to applaud’ $_{int}$
√dwr	daar ‘to revolve’ $_{int}$	dawwara ‘to walk round and round’ $_{int}$
√ṭwf	ṭaafa ‘to go around’ $_{int}$	ṭawwafa ‘to walk round and round’ $_{int}$

Table 60: Stem II intransitive pluractionals.

The action undertaken by the subject of these stem I verbs is also countable. Clapping of hands is an instantaneous event, and while not instantaneous, *revolving* involves the completion of a circuit, again a countable event. These same concepts surface again in stem II, where the root produces a verb consisting of multiple phases, each of which is equal to the event described by the related stem I verb.

The stem II pluractionals above consists of sequential phases. The verb *ṣaffaqa* 'to applaud', for example, describes multiple phases of clapping which take place one after the other. Likewise *qattaʕa* 'to chop up' describes repeated phases of cutting which form a sequence. This need not be the case however. In the next section I discuss stem II pluractionals consisting of phases distributed over space.

7.4.1.2 Phases distributed over space

The verb *qattala* 'to massacre' may describe an event of simultaneous mass killing, perhaps by a bomb, and it is not inconceivable that *qaṭṭaʕa* 'to chop up' can describe an event in which a grid-shaped machine dices something in one swift action.

Wood (2007) observes that in addition to distribution across time, the event phases of a pluractional verb may be distributed across space. It is this which explains why a stem II verb like *kassara* 'to break up' may be durative (when phases of breaking are sequential) or instantaneous, meaning 'shatter', when the event phases are distributed over the space represented by the object of the verb. Other examples of stem II pluractionals consisting of event phases distributed across space are shown below.

Root	Stem I	Stem II
√ksr	kasara 'to break' $_{trns}$	kassara 'to shatter' $_{trns}$
√fʤr	faʤara 'to cleave' $_{trns}$	faʤʤara 'to explode' $_{trns}$
√nql	naqala 'to move to' $_{trns}$	naqqala 'to move back and forth' $_{trns}$
√wzʕ	wazaʕa 'to restrain' $_{trns}$	wazzaʕa 'to distribute' $_{trns}$

Table 61: Stem II pluractionals with phases distributed over space.

Like *kassara* 'to shatter', stem II *faʤʤara* 'to explode' encodes an event in which the object undergoes multiple instances of something akin to cleaving or separating simultaneously. These phases are distributed across space. A slightly different type of distribution across space is found in stem II *naqqala* 'to move back and forth'. The stem I verb encodes motion which terminates at a goal. The pluractional formed from the same root construes an event in which the subject brings about multiple phases of this, either by moving each member of an incremental theme object like a flock of sheep, or by moving the same entity back and forth. The contrast

between stem I *wazaʕa* ‘to restrain’ and stem II *wazzaʕa* ‘to distribute’ serves to illustrate the point that stem II does not simply represent the affixation of the *shadda* to stem I, but rather the combination of a root directly with the stem, which allows it to create new meaning.

Stem II creates this type of verb by placing the root in a structure where it is provided with an Actor subject and a morpheme which requires the verb to construe plural event phases. Roots that are unable to provide countable phases simply yield active or causative verbs in this stem. Roots that can yield some countable sense will do so. The structure of the stem is as shown below, where *x* represents the Actor argument, *PL* represents a pluractional morpheme (the *shadda*) and *something* is the meaning component contributed by the root.

(6) [x PL <something>]

A stem II verb like *saffaqa* ‘to applaud’ is created when the root plugs into this structure, creating an agentive verb where the actor carries out an action consisting of multiple phases that are construed as one event, as illustrated.

(7) [x PL <clap>]

The root √qtʕ lexicalizes an externally caused change-of-state which is realized as stem I *qaṭaʕa* ‘to cut’. This root plugs into the stem, where the Actor subject is interpreted as causative. The result is stem II *qaṭṭaʕa* ‘to chop up’ which encodes repeated phases of chopping or cutting:

(8) [x CAUSE y PL BECOME <cut>]

The pluractional verbs presented so far all correspond (to a greater or lesser degree) with a stem I verb. Roots that lexicalize countable concepts in stem I are able to contribute similar countable concepts when they combine with stem II. Other stem II pluractionals do not correspond with stem I in the same way. These are discussed in the next two sections.

7.4.1.3 Change by degree

Dowty (1979) discusses what he terms degree achievement verbs like *cool* (as in English *the soup cooled)*, in which the subject changes state by degree until it reaches some level of coolness by which it may be considered to have *cooled*. This type of verb formed from a gradable concept encodes scalar change, where the theme of change moves along some scale of a given property like coolness. Any movement along the scale represents a change of state which is inherently comparative. That is, if *the soup* in the example above makes any movement along the scale of *coolness*, this results in *the soup* being cooler than it was. Viewed in this light, as the soup cools, it undergoes multiple changes of state (cooler, cooler, cooler).

Building on Dowty's analysis, Kearns (2007) asserts that there are two types of telic sense for English deadjectival verbs (she uses this term for convenience but notes that they are really root-derived). The first sense is an achievement sense whereby there is one single instant transition to an endstate which can only be defined through comparison to a prior state. She calls this a **comparative endstate** and represents it as 'A-er' as in *cooler*, *bigger*, *wider* and so on. The second telic sense of deadjectival verbs is an accomplishment sense, where the verb construes a durative event which ends with the onset of a unique endstate, which she terms the **standard endstate**. Depending on the nature of the adjective, this standard endstate may be an endpoint on a scale past which no further change is possible (maximum clarity for example), or it may be contextually determined, as with *cool*, where there is some general agreement on what is considered cool and what is not for a given entity.

Kearns identifies a certain type of verb which may construe an instant change of state, while at the same time allowing a process interpretation. First, she presents a diagnostic to determine whether a verb is an achievement verb (describing an *instant* telic event), or an accomplishment verb (describing a *durative* telic event). Achievement verbs like *reach* or *arrive* give an 'event delay' reading with phrases like *in an hour* or *it took an hour* (p.8):

(9) a. John reached the summit in an hour.

b. It took John an hour to reach the summit.

'At the end of an hour John reached the summit'

That is, the event of *reaching the summit* did not occur until an hour had passed. This contrasts with accomplishment verbs (describing *durative* telic events), where *in* and *it took* give an 'event duration' reading not available to achievement verbs (p. 8):

(10) a. John wrote the letter in ten minutes
b. It took John ten minutes to write the letter
'John wrote the letter, and the whole letter-writing event had a duration of ten minutes'

Using this diagnostic, Kearns shows that gradual change of state verbs like *increase* and *decrease* which seem to be atelic are in fact achievement verbs encoding instant changes of state. Like *reach* and *arrive*, they give the event delay reading with *in* and *it took* (p.9):

(11) a. The price increased/decreased in a month.
b. It took a month for the price to increase/decrease.
'After a month had passed the price increased/decreased'

Based on this she concludes that verbs like *increase* and *decrease* are achievement verbs which describe a single transition: the onset of the comparative endstate *become A-er*, which represents a telos. When these verbs appear to be atelic in a sentence like *the price increased for a month*, they represent a series of repeated *become A-er* achievements. What is construed as one coherent event is in fact multiple instances of change.

The same applies to the process reading of change of state verbs like *clear* and *cool.* These verbs yield a durative reading due to the fact that the comparative endstate *become A-er* represents a telos and is repeatable. Unlike *increase* and *decrease* however, *clear* and *cool* have both a comparative endstate (become A-er), and a standard endstate (become A). Because both types of endstate are possible, these verbs give both an event delay reading with *in*, when they are (instant) achievements read as *become A-er*, and an event duration reading with *in*, when they are (durative telic) accomplishments read as *become A*, where A is either contextually defined (in the case of *cool*) or an absolute value (in the case of *clear*) (p.11):

(12) a. The sky cleared in half an hour.

b. ‘The sky was becoming clearer throughout a period of half an hour, and at the end of that period the sky was clear’ (durative; telic)

c. ‘At the end of a half an hour the sky became clearer’ (instant; telic)

Thus a predicate denoting *become A-er* is an achievement (instant and telic). If it is durative it consists of a series of telic changes (become A-er, become A-er, become A-er) and so on. The important point for the analysis put forward below is that Kearns identifies a type of verb, like *increase*, which can be both instantaneous, while at the same time allowing a durative reading which consists of multiple instances of change.

The table below illustrates examples of stem II pluractionals formed from roots that lexicalize property states. In each case, the root combines with the stem, where it is provided with an Actor subject and a pluractional marker. The resulting structure is interpreted as causative, and the object changes state.

Root	**Adjective**	**Stem II**
√qwy	qawiyy ‘strong’	qawwaa ‘to strengthen’ trns
√ʔxr	ʔaxiir ‘last; final’	ʔaxxara ‘to delay; hold up’ trns
√ḥsn	ḥasan ‘good’	ḥassana ‘to improve’ trns
√shl	sahl ‘easy’	sahhala ‘to ease’ trns
√rsx	raasix ‘entrenched’	rassaxa ‘to entrench’ trns
√kbr	kabiir ‘big	kabbara ‘to enlarge’ trns
√ṭwl	ṭawiil ‘long’	ṭawwala ‘to lengthen’ trns
√qll	qaliil ‘little; few’	qallala ‘to lessen’ trns
√kθr	kaθiir ‘many; a lot’	kaθθara ‘to increase’ trns
√kθf	kaθiif ‘dense’	kaθθafa ‘to condense’ trns

Table 62: Stem II verbs from property state roots.

These stem II verbs describe events which may be viewed as instantaneous, but which may also be durative. That is, the change of state undergone by the object represents movement along a scale, and as such may be broken down into a series of repeated changes. These roots are therefore able to yield a countable concept in stem II, and so the pluractional marker has an effect on them. Each root yields multiple phases of ‘become X-er’, (become stronger; become weaker and so on).

It is important to note that this type of scalar change should not be confused with the duration of an event. Something may be enlarged more or less instantaneously , but the point is that no matter how small the change, because it takes place by degree it is always possible to break it down into smaller units. It could be argued that this scalar interpretation comes about as a natural consequence of a gradable concept being placed in a causative environment. A concept like *good*, for example, made causative, will yield *improve* anyway, and this need not come about as a result of a pluractional marker. However, as previously discussed, both stem IV and stem II have the potential to produce causative verbs. Consider the verbs that these roots yield in stem IV.

Root	Stem II	Stem IV
√ʔxr	ʔaxxara 'to delay; hold up' trns	---
√ḥsn	ḥassana 'to improve' trns	ʔaḥsana 'to do well' trns
√shl	sahhala 'to ease' trns	ʔashala 'to relieve (the bowel)' trns
√rsx	rassaxa 'to entrench' trns	ʔarsaxa 'to entrench' trns
√kbr	kabbara 'to enlarge' trns	ʔakbara 'to admire' trns
√ṭwl	ṭawwala 'to lengthen' trns	ʔṭaala 'to do for a long time' trns
√qll	qallala 'to lessen' trns	ʔaqalla 'to lessen; do a little of' trns
√kθr	kaθθara 'to increase' trns	ʔakθara 'to do a lot of' obl
√kθf	kaθθafa 'to condense' trns	---

Table 63: Stem II verbs contrasted with stem IV.

While some roots do yield scalar concepts in stem IV too, the pattern is much less consistent. Roots like √ḥsn and √kbr produce causative verbs in stem II, where the caused change takes place in degrees, but active verbs in stem IV, where the Actor argument is either interpreted as *doing*, or the causation is cognitive, and therefore the object does not change by degree. A related contrast is seen with other types of stative root. Consider the data below.

Root	Stem I	Stem II	Stem IV
√ʕrf	ʕarafa 'to know' trns	ʕarrafa 'to introduce someone to '	ʔaʕarafa 'to tell'
√ʕlm	ʕalima 'to come to know; learn of' obl	ʕallama 'to teach'	ʔaʕlama 'to tell'

Table 64: Stem II and stem IV with √ʕrf and √ʕlm.

Both the stem II verbs and the stem IV verbs in this table involve a change of state in the object. The difference is that the stem IV verbs involve a change from a state of not knowing or being aware of something, to a state of knowing it. In Kearn's terms this is a change similar to *become A*, but since no adjectives are in play I will use *become X*. In contrast, stem II *ʕarrafa* 'to introduce' and *ʕallama* 'to teach' both involve a change of state in the object which may take place by degree. Teaching involves causing the object to know more, that is become X-er, in degrees, until some inherent endpoint such as mastery is reached. Likewise in an introduction the object gradually goes through phases of become X-er until he or she reaches the standard endstate in which s/he can be considered to know something or someone. This type of gradual transition towards an endstate becomes clearer when the structure is reflexivized in stem V, where stem II *ʔarrafa* becomes *taʕaraffa* 'to get to know', and stem II *ʕallama* becomes *taʕallama* 'to learn'. I will present further examples in the next chapter.

One final pluractional verb that fits into this category of verbs which may represent one telic change but which may also be durative comes from the root √wld:

Root	Stem I	Stem II
√wld	walada 'to give birth to' $_{trns}$	wallada 'to generate' $_{trns}$

Table 65: Stem I and stem II with √wld.

The stem I verb from this root represents one instance of the subject bringing something into existence. The stem II verb may also do this. For example, it may construe an event in which someone generates an idea. The difference is that the stem II verb can be extended, so that it describes continued cycles of bringing into existence, while the stem I verb cannot. Consider the difference between stem I *walada* 'to give birth' and stem II *wallada* 'to generate'. Suppose both verbs are made durative and the events they describe continue over a duration of several hours. The giving birth event is inherently telic, and the object of the verb is brought into existence only at the end of the event. The situation is different with the event described by the stem II verb *wallada* 'to generate'. With an event like generating electricity for example, the electricity is brought into existence immediately, and this must be repeated in multiple phases in order for the event to have duration. The difference between the stem I and the stem II verb then is that the first consists of a single phase of bringing into existence, whereas the second consists of multiple phases. Thus while it is not the case that stem II *wallada* is always durative, and may be used to

describe seemingly punctual events like *generating an idea* for example, it has the potential to describe an event that takes place in stages, whereas walada can only ever describe one stage. The last effect of pluractionality in stem II is that it creates verbs of continuous causation. These are discussed below.

7.4.1.4.Continuous causation

Talmy (1976) notes a difference between extent-durational causation and beginning-point causation. Extent-durational causation involves causation for the duration of the event, whereas beginning point causation involves the causee bringing about what then may be considered an autonomous event. I suggest that extent durational causation is an example of phasal plurality, as it necessarily involves repeated phases of cause and effect. Examples of stem II verbs of continuous causation are given below.

Root	Stem I	Stem II	Stem IV
√hrk	--	harraka ‘to move; stir (tea)’ trns	--
√ṭwr	--	ṭawwara ‘to develop’ trns	--
√nʃʔ	naʃaʔa ‘to grow up’ int	naʃʃaʔa ‘to raise’ trns	ʔanʃaʔa ‘to found’
√ʤls	ʤalasa ‘to sit’ int	ʤallasa ‘to hold in a sitting position’ trns	ʔaʤlasa ‘to sit’ trns

Table 66: Stem II extent durational causation verbs.

The root √ḥrk encodes motion, but this is not directed towards a goal. When this root plugs into stem II it produces transitive *harraka* ‘to move; to stir’, a causative verb where the subject moves the object. As with *wallada* ‘to generate’, the event described by this verb (the subject moving the object) is over immediately. That is, as soon as the subject acts on the object, *moving* has taken place, but at the same time this may be continued indefinitely through repetition. As a result, the duration of the causing event matches the duration of the movement that is undergone by the object.

A second example of a root that yields a verb of phasal plurality in stem II but that does not appear in stem I is √ṭwr, which produces stem II *ṭawwara* ‘to develop’. Again here, the event described by the verb is over immediately, that is, as soon as the subject begins to develop the object, *developing* has taken place, but this is continued in repeated cycles of cause and effect

throughout the duration of the event. Thus these roots combines with a morpheme that specifies that the event described consists of plural phases, and they contribute information about what each phase is.

The contrast between stem II *naʃʃaʔa* 'to raise', and stem IV *ʔanʃaʔa* 'to found' illustrates the difference between a causative pluractional verb, which encodes continuous causation, and a punctual causative verb. With the stem II verb the causation extends for the duration of the event. That is, the child grows, and throughout that period the parent raises. In contrast, stem ʔanʃaʔa 'to found' encodes one instance of bringing into being.

This difference is seen again with the root √ʤls. The contrast between stem II *ʤallasa* and stem IV *ʔaʤlasa* may be explained using Shibatani's (1976) distinction between manipulative causation, where the causee directly acts on the causee, and directive causation, where the causer may give an order to the causee. Each verb is shown in context below (the nominalization of the verb is used in the stem II example).

(13) Stem II *ʤallasa* 'to put or keep in a sitting position':

الكلب الذي عاد الى طبيعته بعد ان وضع في آلة لتجليسه مئة عام![30]

al-kalb allaðii ʕaada ʔila ṭabiiʕati-hi baʕada ʔan wuḍiʕa fii aalatin
def.dog that returned.3.msg to nature-his after that was put.3msg in machine

li-taʤliisi-hi miʔat ʕaam!
for sitting-his 100 year

'The dog that reverted to his nature after being put in a machine that kept him sitting 100 years!'

[30] BYU: Hayat96 — reference: GEN1996:4325

(14) Stem IV *ʔaʤlasa* 'to sit' $_{trns}$:

لما حضروا أجلسهم حوله وقال...[31]

lammaa ḥaḍaruu ʔaʤlasa-hum ḥawla-hu wa qaala…..

when arrived.3mpl sat.3msg-them around-him and said.3msg

'When they arrived he sat them around him and said…..'

The stem II verb describes an event in which the subject acts on the object for the duration, either by holding it still, or by manipulating it in some way, and this is therefore continuous causation. In contrast, with the stem IV verb the causation is beginning point causation. That is, the causing event does not continue for as long as the object is sitting down. In the light of the preceding analysis at least this instance of extent durational causation may be incorporated into a wider analysis of pluractionality, in which the subject sits the object, and continues to keep it seated through repeated cycles of cause and effect.

7.5 SUMMARY

In this chapter I have argued that stem II consists of both an Actor subject and a pluractional marker. Roots that are unable to contribute countable, repeatable concepts simply create causative or active verbs in this context. In contrast, roots that are able to yield some type of countable element will do so. The root combines with the stem where it yields a verb consisting of plural event phases. The resulting verb may be causative, whereby an incremental theme object undergoes a change of state multiple times, either in consecutive phases or simultaneously. The verb may also be active, where the subject repeatedly carries out a temporally bound action. Another manifestation of pluractionality in stem II is seen in verbs of continuous causation, where the subject immediately effects the object and continues to do so for the duration of the event. A third type of pluractional consists of verbs in which the object undergoes a change of state by degree. In the next chapter I examine the interaction between a pluractional morpheme, a reflexive morpheme and a root in stem V.

[31] BYU: Masri2010 — reference: A263820I1843S300D26-Jul-2010

Chapter 8: Stem V

8.1 Goal of the chapter

In the previous chapter I argued that stem II provides a context in which certain roots yield an active pluractional verb that describes an event consisting of plural phases. The stem also produces verbs from roots that lexicalize things and states, and these are not pluractional, with the exception of certain states that may be conceptualized as coming about in a series of repeated achievements. My goal in this chapter is to show how a pluractional morpheme and a reflexive morpheme interact in stem V to determine the type of event that stem V verbs may describe. I begin by discussing verbs from things, comparing these to those formed in stem II, and showing that the difference is that stem II verbs formed from roots that lexicalize things are externally oriented, while stem V verbs formed from the same root are internally oriented. I then examine the different types of pluractional that stem V produces. I end the chapter with a summary of the main points made.

8.2 Verbs from things

As discussed in chapter 7, I propose an extremely basic analysis of verbs from things in Arabic. A root that lexicalizes a thing plugs into stem II, which provides it with an Actor argument. The root now acquires verbal force, and it comes to describe dynamic activity that begins with this Actor. This dynamic activity is usually directed towards another participant. In contrast, stem V verbs contain a the reflexive /t/ affix, with the result that the event described is internally oriented. The table below gives examples of stem II and stem V verbs formed from roots that lexical things.

Root	Nominal	Stem II	Stem V
√ğdw	ğadaaʔ ‘lunch’	ğaddaa ‘to provide lunch for’ trns	tağaddaa ‘to eat lunch’
√ʕʃw	ʕaʃaaʔ ‘dinner’	ʕaʃʃaa ‘to provide dinner for’ trns	taʕaʃʃaa ‘to eat dinner’
√ʔθr	ʔaθr ‘a mark’	ʔaθθara ʕala ‘to influence; have an effect on’	taʔaθθara ‘to be impressed; influenced; moved by’
√ṭyr	ṭiira ‘omen’	ṭayyara ‘to let fly’	taṭayyara ‘to see an evil omen in something’
√ṣwr	ṣuura ‘image; picture’	ṣawwara ‘to depict; to photograph’	taṣawwara ‘to imagine’
√ʕṭr	ʕiṭr ‘perfume’	ʕaṭṭara ‘to perfume’ trns	taʕaṭṭara ‘to put on perfume’ int
√qyd	qayd ‘shackle’	qayyada ‘to restrict; to bind’	taqayyada ‘to be restricted’
√ʔss	ʔasaas ‘foundation’	ʔassasa ‘to found’	taʔassasa ‘to start up’ int
√wrṭ	warṭa ‘mire’	warraṭa ‘to enmire’	tawarraṭa ‘to get bogged down’
√ʕwd	ʕaada ‘custom’	ʕawwada ‘to accustom’ trns	taʕawwada ‘to become accustomed’

Table 67: Stem V verbs from things.

Whereas the stem II verbs above describe externally oriented events, the presence of the /t/ affix in stem V specifies that the event described is internally oriented. The meaning of the root in each structure may remain relatively constant, or it may vary. The root √ğdw, for example, contributes the meaning of *lunch* in both cases. This is represented below.

(1) Stem II: ğaddaa ‘to lunch’ trns: [x CAUSE <lunch> to y]

Stem V: tağaddaa ‘to lunch’ int [x CAUSE <lunch> to x]

As noted by Kiparsky (1997) verbs formed from things are interpreted based on knowledge of the thing encoded in the verb and what may be done with it in a given context. The first structure above describes a situation in which one participant undertakes some activity involving *lunch,* and the activity finishes with a second participant. This of course does not rule out throwing lunch at someone, vomiting lunch into someone’s lap, turning someone into lunch and so on, and I suggest that given a specific context in which these actions are regularly undertaken this verb could acquire these meanings. However, given standard cultural practice regarding what one person does in relation to another involving *lunch,* the verb is interpreted as *providing lunch for,* or *taking out for lunch*. The second structure describes a situation in which

one participant does something involving *lunch*, and the activity finishes with that same participant. This is interpreted as *eating lunch*.

A similar analysis applies to the difference between transitive stem II *ṣawwara* 'to depict; to photograph' and transitive stem V *tasawwara* 'to imagine'. With the stem II verb, action is directed from the subject to the object, as shown.

(2) Stem II *ṣawwara* 'to depict': [x CAUSE <picture> of y]

The y argument here is both the content of the picture and the Endpoint of the event. When the root plugs into stem V, the resulting structure dictates that the Initiator and Endpoint of the event be the same, and the second (reflexive) *x* argument is interpreted as being something akin to the location of the *picture* contributed by the root.

(3) Stem V *taṣawwara* 'to imagine': [x CAUSE <picture > of y at x]

The result is a verb where the subject creates a picture internally. The subject instigates mental activity which is directed at the object of the verb, but which does not terminate with that object. Instead, the activity both begins and finishes with the subject, and this is coded by the /t/ affix in the verb. This type of internal mental activity is also present in the stem V verb *taṭayyara* 'to discern an omen'. The stem II verb *ṭayyara* 'to let (birds) fly' is causative, and formed from the sense of the root that surfaces in stem I *ṭaara* 'to fly'. The stem V verb may also be viewed as causative, in the sense that the subject brings about an evil omen by engaging in mental activity. Unlike the stem II verb this action is not projected outward. The subject therefore acts and is affected by that action. The structure of the verb is as shown.

(4) Stem V *taṭayyara* 'to sense an omen': [x CAUSE <omen> at x]

I noted in the previous chapter that stem II consists of both a pluractionalizing function and also provides an Active subject which allows roots that lexicalize things to create verbs. Stem V behaves in the same way. The remainder of the chapter is concerned with the types of pluractional created in stem V.

8.3 PLURACTIONALS

In the previous chapter I analyzed stem II pluractionals according to whether they encode multiple phases distributed over time or over space, and whether they express change by degree or continuous causation. I use the same classifications for stem V.

8.3.1 Phases distributed over time

A reflexivized stem V pluractional verb may construe an event in which the subject undergoes a multiple changes in sequence, as shown.

Root	Stem II	Stem V
√qtʕ	qaṭṭaʕa 'to chop up'$_{trns}$	taqaṭṭaʕa 'to cut in and out' (telephone line etc.)
√fkk	fakkaka 'to deconstruct' $_{trns}$	tafakkaka 'to disintegrate' $_{int}$
√hll	hallala 'to dissolve' $_{trns}$	tahallala 'to decompose' $_{int}$
√mzq	mazzaqa 'to tear up' $_{trns}$	tamazzaqa 'to tear up' $_{int}$
√wld	wallada 'to generate' $_{trns}$	tawallada 'to come about; be generated' $_{int}$

Table 68: Stem V pluractionals.

The two-participant events represented by the stem II verbs in the table above consist of a participant that initiates the event, and another that undergoes it. The stem V verbs describe the same dynamic action described by the stem II verbs, but here it is undergone by the subject. The Initiator and Endpoint roles are fused in the stem V verb. Thus whereas the stem II verbs in the table above describe externally caused events, the stem V verbs describe internally caused events. The structure created by the pluractional morpheme and the reflexive /t/ in stem V is as shown.

(5) [x CAUSE x PLURAL <something>]

For example, the root √qtʕ produces a meaning similar to *discontiguous* in this context, and this is pluralized in stem V *taqaṭṭaʕa*, to produce a verb describing an event in which the subject becomes discontiguous multiple times:

(6) [x CAUSE x PLURAL BECOME <discontiguous>]

With most of the examples given above the phasal nature of the verb is clear. Each phase has a temporal bound, and when this is reached the next phase begins. With other stem V pluractionals the phases may be distributed over space. These are discussed below.

8.3.2 Phases distributed over space

The pluractional nature of a stem V verb with phases distributed over space is not always immediately obvious. A comparison of stem VIII and stem V helps to highlight the plural nature of stem V however.

Root	Stem I	Stem VIII	Stem V
√mdd	madda 'to extend' trns	ʔimtadda 'to extend' int	tamaddada 'to stretch out' int
√ʤmʕ	ʤamaʕa 'to gather' trns	ʔiʤtamaʕa 'to get together' int	taʤammaʕa 'to concentrate in one location' int
√nql	naqala 'to move to' trns	ʔintaqala 'to move to' int	tanaqqala 'to move from place to place' int
√lft	lafata 'to turn' trns	ʔiltafata 'to turn' int	talaffata 'to turn back and forth' int

Table 69: Stem V pluractionals with phases distributed over space.

Both stem VIII and stem V produce verbs in which the initiator and the end point of dynamic action are the same entity. The difference is that while stem VIII describes a single action, the stem V verb describes an event composed of phases of action. With the root √mdd the relevant distinction between stem VIII *ʔimtadda* 'to stretch; to extend' and stem V *tamaddada* 'to stretch out' is directional. The stem VIII verb describes linear extension, while the stem V verb describes simultaneous phases of extension, that is, extension in multiple directions from a central point. The root √ʤmʕ produces a similar contrast. The stem VIII verb from this root *ʔiʤtamaʕa* 'to meet; to combine' describes a coming together in one location, where the parties concerned are construed as meeting through the traversal of a linear path with a meeting point in the middle. The stem V verb *taʤammaʕa* 'to concentrate; congregate' pluralizes this concept, so that elements of the subject come together at a single point from multiple directions. Examples of these stem V verbs in context are given below.

(7) مع كل صرخة الليل...يتمدد بلا انتهاء ثم يتجمع [32]

maʕa kulli ṣarxatin al-layl… . yatamaddad bi-laa ʔintihaaʔ θumma yataʤammaʕ
with every scream def.night….expand.3msg with-no end then contract.3msg
'With every scream the night expands into infinity, then contracts again'

The last two verbs in the table above involve distribution over space and time. The contrast between stem VIII *ʔintaqala* 'to move to' and stem V *tanaqqala* 'to move from place to place' is the same as that between stem VIII *ʔiltafata* 'to turn' and stem V *talaffata* 'to turn back and forth'. In both cases the stem VIII verb describes a bound event that ends with the arrival of the subject at a specific goal, either through translational motion in the case of *ʔintaqala*, or through a change in body position in the case of *ʔiltafata*. With the corresponding stem V verbs, action is repeated in phases, with each phase terminating (and a new one beginning) when a goal is reached.

8.3.2. Change by degree

Other pluractionals formed from gradable concepts construe change by degree. These may be formed from property state adjectives or from roots encoding mental processes.

8.3.2.1 From property states

Stem V pluractionals formed from property states encode processes which consist of multiple instances of 'become A-er' (see discussion of Kearns: 2005 in previous chapter). With roots that do not encode a unique endstate, the change described in the verb is over as soon as it has begun, but may continue through repetition.

Root	Stem II	Stem V
√ḥsn	ḥassana 'to improve' $_{trns}$	taḥassana 'to improve' $_{int}$
√ʔxr	ʔaxxara 'to delay' $_{trns}$	taʔaxxara 'to fall behind; become late'
√wḍḥ	waḍḍaḥa 'to make clear'	tawaḍḍaḥa 'to emerge; become clear'
√wθq	waθθaqa 'to strengthen' $_{trns}$	tawaθθaqa 'to strengthen' $_{int}$

Table 70: Stem V verbs from property state roots.

[32] Munif (2008) p.259

For example, stem V taḥassana ‘to improve’ describes an event that is immediately achieved when the subject begins to improve, but this improvement may continue indefinitely.

8.3.2.2 From mental states

This type of change by degree is also present in stem V verbs that express telic mental processes. Examples are given below.

Root	Stem I	Stem II	Stem V
√ʕlm	*ʕalima* ‘to know’	*ʕallama* ‘to teach’	*taʕallama* ‘to learn’
√qbl	*qabila* ‘to accept’	*qabbala* ‘to kiss’	*taqabbala* ‘to come to accept’
√ʕrf	*ʕarafa* ‘to know; to recognize’	*ʕarrafa* ‘to introduce to’	*taʕarrafa* ‘to get to know’
√fhm	*fahima* ‘to understand’	*fahhama* ‘to make understand’	*tafahhama* ‘to come to understand’

Table 71: Stem V verbs from mental state roots.

When these mental state roots appear in stem I they yield verbs describing simple mental states or entry into those states. When they combine with stem V they are placed in a structure which adds causation; which reflexivizes a causer and causee; and requires the verb to encode plural phases. The result is a verb in which the subject repeatedly initiates cognitive activity and undergoes an incremental mental state as a result. In each case, the subject moves through repeated stages of ‘X-er’ until finally reaching an endstate in which complete knowledge, acceptance, or understanding has been achieved.

8.3.2.3. Plural action from sense roots

Certain sense roots may appear in stem V to construe verbs in which an active subject engages in repeated activity, as shown.

Root	Stem I	Stem II	Stem V
√ʃmm	ʃamma ‘to smell; to sniff’ $_{trns}$	ʃammama ‘to let sniff sth’	taʃammama ‘to sniff repeatedly; nose at’
√ðwq	ðaaqa ‘to taste’ $_{trns}$	—	taðawwaqa ‘to taste repeatedly; savour’
√lms	lamasa ‘to touch’ $_{trns}$	—	talammasa ‘to touch repeatedly; to grope’

Table 72: Stem V verbs from sense roots.

These stem V verbs encode events in which the subject carries out an action consisting of repeated phases of smelling, tasting and touching respectively. The causative structure which I have proposed for stem V yields the following structures for these three verbs.

(8) [x CAUSE x PLURAL smell y]
[x CAUSE x PLURAL taste y]
[x CAUSE x PLURAL touch y]

The effect of the causation and the reflexivization here is to create a verb with an active subject. These verbs describe internally caused events in which the subject plays both an Actor and an Undergoer role in that he or she carries out the action of smelling, tasting or touching, and experiences a sensation as a result. The stem I verbs from these roots may take agentive or experiencer subjects, construing either deliberate or incidental actions. In contrast, the action described by the stem V verbs is deliberate, and the subject causes him or herself to experience the sensation encoded in the root.

8.3.2.4 Activities from states

Roots that lexicalize states with Undergoer-type arguments in stem I may produce durative activity verbs in stem V. The table below gives some examples.

Root	**Stem I**	**Stem II**	**Stem V**
√mlk	*malaka* 'to own; be owner of'	*mallaka* 'make owner of'	*tamallaka* 'to possess' (said of demons etc.)
√xyl	xaala 'to think; believe' $_{trns}$	xayyala 'make one think that' $_{trns}$	taxayyala 'to imagine' $_{trns}$
√xwf	xaafa 'to fear' $_{obl}$	xawwafa 'to scare' $_{trns}$	taxawwafa 'to worry about' $_{trns}$

Table 73: Stem V verbs describing actively maintained states.

These stem V verbs all describe events in which the subject acts, and maintains that activity through repetition. For example, the root √mlk produces the transitive stative verb *malaka* 'to own' in stem I, but the durative activity verb *tamallaka* 'to possess' (said of verbal subjects like *demons, fear, feelings* and so on) in stem V. An example in context is given below.

(9) تملكته حمى قوية [33]

tamallakat-hu ḥummaa qawiyya
possessed.3fsg-him fever powerful
'A powerful fever possessed him'

Here, the subject takes possession of the object immediately, and then actively maintains this possession throughout the duration of the event. The same analysis applies to stem V *taxawwafa* 'to worry about' and *taxayyala* 'to imagine'. Both verbs are formed from roots that lexicalize cognitive activity which is undergone rather than actively engaged in. The root √xwf produces stem I *xaafa* to fear, and √xyl yields *xaala* 'to believe'. In the stem V verbs the subject is in control, actively engaging in cognitive activity. This type of event is durative and atelic. As such it is over as soon as it has begun, but may be continued through repetition. That is, as soon as the subject of stem V *taxawwafa* has begun to worry, *worrying* has taken place. In order for this to continue, further worrying must occur. Thus the structure of stem V allows a stative root to yield a durative activity verb by providing an Actor argument which is reflexivized with the undergoer argument of the root, and by providing a pluractional marker which (in this case) creates durativity through repetition.

8. 4 SUMMARY

In the chapter on stem II I established that the stem consists of an Actor argument which is usually interpreted as causative, and a pluractional marker. The pluractional marker is not active when roots that lexicalize things and non-gradable states plug into the stem. Roots which are able to provide a telos interact with the pluractional marker however, and with few exceptions, they produce verbs describing externally caused events consisting of plural phases. In this chapter I have shown that when a root combines with an Actor argument, a pluractional marker, and a reflexive morpheme in stem V, the result is a verb that describes either an internally caused event, which also consists of plural phases if the root can provide a telos. With some roots, the type of verb created describes an event in which a participant undergoes multiple instances of breaking, separating and so on. Other roots come to describe events of internally caused change by degree, such as improving and strengthening, or incremental mental states like learning or accepting, over which a subject has some degree of control. Stem V therefore

[33] Munif (2008) p.129

contains morphemes that determine both the temporal quality of a verb, and type of cause it may construe (internal and not external). A root is plugged into this structure and different elements of the meaning that it has the potential to produce come to the fore.

I have so far focused on verbs created when the root combines with morphemes that build meaning by contributing fused Initiator and Endpoint arguments, Actor arguments, and by specifying plural event phases . The last type of morpheme that I will discuss in this dissertation is a marker of duality. This is the topic of the next two chapters.

Chapter 9: Stem III

9.1 GOAL OF THE CHAPTER

In the previous two chapters I argued that the *shadda* of stems II and V creates a verbal environment in which a root produces a verb consisting of multiple phases. This type of phasal plurality is one way in which structure specifies number. Roots combine with stem II and stem V to create verbs of plural change; plural action; plural direction and so on. The second way in which structure specifies number is through creating verbs which construe two relations. While stems II and V create plural verbs, stems III and VI create a set of verbs characterized by duality. This chapter and the next are concerned with the nature of this duality and the types of event that a dual verb describes.

In this chapter I argue that stem III consists of a morpheme which functions as a marker of duality, and that a root combines with this morpheme to create a verb that construes two relations conceptualized as one event. The roles of the participants in these relations are not equal however, because the verbal subject is viewed as initiating the event described. It is this which explains how it is that stem III creates a number of verbs like *ʔaanaqa* 'to hug', which appears to encode a reciprocal concept, but which can be used to describe an event in which the subject hugs something like a tree or a letterbox and is not hugged back. The reciprocal flavour of some verbs comes from the fact that the root creates a reciprocal concept in stem III, but this is then carried out by a subject on an object. The same verb becomes a true reciprocal through reflexivization in stem VI. This is the topic of chapter 10.

I begin by presenting the form of stem III, where I show that the long vowel /aa/ that distinguishes the stem is a marker of duality in both the nominal system and in verb conjugation. I also present data to contrast stem III with the truly reciprocal stem VI, before explaining how stem III verbs encode two relations, and how the subject of the verb represents the Initiator of one of these relations, and the Endpoint of the other. Having accomplished this I illustrate the different types of dual verb that are created in the stem, beginning with shared events (the term is Benmamoun's: 2000); then moving through interaction verbs; transaction verbs; competition verbs; verbs of opposition; verbs of cooperation; stimulus-response verbs; and then verbs formed from roots which lexicalize symmetrical concepts. I end the chapter with a summary of the main points made.

9.2 THE STRUCTURE OF STEM III

Stem III incorporates the long vowel /aa/ between the first and second root consonants, as shown below with the root √qṭʕ.

(1) Stem IV pattern: $C_1aaC_2aC_3a$
Example: √qṭʕ → $C_1aaC_2aC_3a$ → qaaṭaʕa 'to interrupt; to boycott'

Wright (1967) analyzes this stem as reciprocal, but there is something troubling about this analysis if reciprocality is taken to mean that two event participants stand in an equal relation in which they carry out the same action on each other. The transitive stem III verb *qaaṭaʕa* 'to interrupt' for example, does not construe an equal relation in which the subject and object interrupt each other. Even stem verbs with a more reciprocal flavour may be used in non-reciprocal contexts. The stem III verb *ʕaanaqa* 'to hug', for example, may describe a unilateral hug, just as *naaqaʃa* 'to discuss' may take an object which does not participate in any discussion:

(2) جوز **عانقت شجرة** الزيتون [34]

ʕadʒuuz ʕaanaq-at ʃadʒarata az-zaytuun
old woman hugged-3fs tree olives.def
'An old woman hugged the olive tree'

مقالة تناقش خطاب المجاهد الكبير[35]

maqaala tunaaqiʃ xiṭaaba al-muʤaahid al-kabiir
article discuss.3fs speech holy warrior.def big.def
'An article that discusses the speech of the great holy warrior'

The true reciprocal stem is stem VI, which has the same long vowel as stem III, with the addition of the reflexive /t/ affix. Thus √qṭʕ creates *qaaṭaʕa* 'to interrupt' in stem III, but *taqaaṭaʕa* 'to intersect' in stem VI, and this stem VI verb describes a reciprocal event in which both event participants intersect with each other. When these verbs are conjugated and given a

[34] http://www.aklaam.net/forum/showthread.php?t=1411
[35] *www.albasrah.net/ar_articles.../abodoha_070510.htm*

3m.dual subject, the reciprocal formed in stem VI is interpreted as construing a two participant event in which the two elements of the subject act on each other, whereas the stem III verb is not:

(3) Stem VI: taqaaṭaʕaa ‘they (two) intersected’

Stem III: *qaaṭaʕaa ‘they (two) interrupted each other’

Stem III verbs which appear to construe reciprocal events also exhibit this contrast with their stem VI counterparts, as illustrated below.

(4) a. Stem VI: tanaafasaa ‘they (two) competed with each other’
Stem III: naafasaa ‘they (two) competed’ / *‘ competed with each other’

b. Stem VI: taṣaaraʕaa ‘they (two) wrestled with each other’

Stem III: ṣaaraʕaa ‘they (two) wrestled’ / *‘wrestled with each other’

Stem III therefore creates a type of verb which may be considered a ‘one-way reciprocal’, in that in encodes a concept which appears to be reciprocal, but this concept is used to describe a relation between subject and object, not between elements of the same subject. It is this that explains the difference between stem III and stem VI verbs construing apparently symmetrical concepts:

(5) Stem VI: tasaawayaa ‘they (two) were equal with each other’
Stem III: saawaa-hum ‘he was equal to them’

The reciprocal stem VI verb *tasaawaa* ‘to equal’ may be used intransitively with a dual or plural subject, where it means that every element of the subject is equal to every other element of the subject. In contrast, the stem III verb *saawaa* ‘to equal’ is transitive, and construes a relation wherein the subject is equal to the object.

Stem VI is therefore the stem in which true reciprocals are formed, and I will have no more to say about true reciprocality in this chapter. What is shared between stem III and stem VI is the long vowel /aa/, which, I argue, is a marker of *duality*, rather than reciprocality. Benmamoun (2000) proposes that certain stem III verbs are really plural forms of stem I, and that they encode plurality of events. He offers the following data from Moutaoukil (1988) to

illustrate that rather than reciprocality, stem III verbs often have the meaning of sharing in the same activity (the notation is mine).

(6) saakana xaalidun ʕumaran d-daara
inhabited.3msg Khalid.nom Omar.acc the-house.acc
'Khalid shared the house with Omar'

In support of his assertion that this type of stem III verb encodes plural events, Benmamoun points out that vowel length encodes plurality in the nominal system of Arabic (p.57):

(7) a. maktab makaatib
office offices
b. dars duruus
lesson lessons
c. kalb kilaab
dog dogs

This fact leads him to assert that vowel length also marks plurality in stem III. However, an analysis in which stem III construes plural events is limited to a small number of shared event verbs to be discussed below. I argue that the plurality of events that Benmamoun proposes for verbs like saakana 'to cohabit with' is better analyzed as verbal duality, where a verb construes two relations as one event. In support of this, I note that whereas any long vowel may mark plurality in the nominal system, the long vowel /aa/, which appears in stem III, is the exclusive marker of duality in nominative dual nouns and in dual verbs:

(8) walad; walad**aa**n; walad-ha; walad**aa**-ha
boy.nom two boys.nom son-her two sons-her
'boy' 'two boys' 'her son' 'her two sons'

(9) ðahaba; ðahab**aa**; ðahabat; ðahabat**aa**
went.3msg went.2mdl went.3fsg went.3fdl
'he went' they (two males) went' 'she went' 'they (two females) went'

Danks (2011) presents an extensive analysis of stems III and VI in which he argues that the function of the long vowel /aa/ is to mark atelicity. While I believe this analysis to warrant some merit, I do not think that it precludes the possibility that this vowel also marks duality. An analysis in which stem III is atelic, while able to account for a great deal of data, is obliged to view the mutual nature of some stem III verbs as a simple coincidence. That is, the fact that a co-participant is added is inconsequential and is just a result of the root combining with an atelic stem. In this chapter and the next I will have nothing to say about atelicity, as Danks does a fine job of presenting his case. My aim here is to explore the phenomenon of the duality that is present in a large number of stem III verbs. In the next section I determine the type of event that a dual verb may describe.

9.2.1 Events consisting of two relations

In chapter 4 on stem VIII, I discussed the type of internally-oriented event that verbs created in that reflexive stem describe, and I used the diagram below from Kemmer (1993) to represent an event in which one participant represents both the Initiator and Endpoint of a relation.

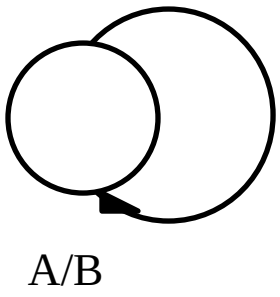

Figure 9: An internally-oriented event.

This representation of an internally oriented event contrasts with that of an asymmetrical event, in which the direction of a relation is outward from one participant to another:

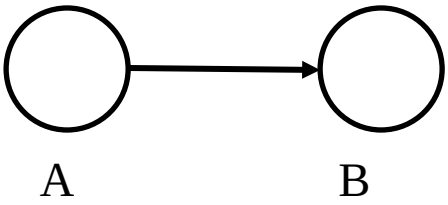

Figure 10: An aysmmetrical event.

Stem III verbs construe a different type of event consisting of two relations. The root √skn, that lexicalizes a singular asymmetric event in stem I *sakana* 'to reside; to live', yields the concept of *cohabitation* in stem III *saakana* 'to live with', in which there are two participants, each living with the other. There are now two relations: one from A to B, and one from B to A. I represent this as shown.

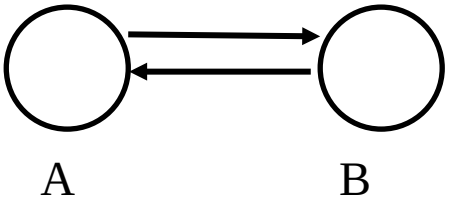

Figure 11: An event consisting of two relations.

Each participant in the event represents the Initiator of one relation, and the Endpoint of another. This type of dual relation underlies the verb *saakana* 'to cohabit with'. If Khalid lives with Omar, it is necessarily the case that Omar lives with Khalid. There is a mutual state of cohabitation obtaining between the two, and it is this mutual state that the diagram above represents. However, while the state of cohabitation is inherently equal, the roles of the subject and object of the verb *saakana* are not. The subject of the verb is more prominent in the discourse, and the verb is weighted towards construing the situation of the one of the parties involved in the dual relations shown above. A stem III verb therefore construes an event in which the subject of the verb is both Initiator of one relation and Endpoint of another. That this

may also be true of the object of the verb is not important, and in fact many stem III verbs exist where the grammatical object does not represent either Initiator or Endpoint roles. I will illustrate this in the sections that follow.

9.3 STEM III DUAL VERBS

I argued above that a root combines with the dual marker /aa/ to create a stem III verb that construes two relations, and that the subject represents the Initiator of one of these, and the Endpoint of the other. It is this which allows stem III verbs to express all manner of dual concepts: sharing; interaction; transaction; contact; competition; opposition and so on. As noted above, this stem conveys the situation of the verbal subject, and it is not always the case that the second party involved in these dual relations corresponds with the grammatical object. Individual roots combine with the stem and they provide information about the nature of an interaction; a transaction; a competition, and so on. Thus the morpheme /aa/ thus specifies duality, and the root determines the exact shape this duality will take. I discuss the different types of dual event expressed in this stem in turn, beginning with verbs that construe shared events.

9.3.1 Shared event verbs

I noted above that Benmamoun (2000) identifies a class of stem III verbs which describe what he terms shared events, and that he analyzes these as cases of plurality of events. I retain the term *shared event*, but I view these verbs in a different light. Rather than construing plural events, this type of verb construes one event in which each of the event participants is a 'co-X', where the nature of 'X' is contributed by the root. The verbs are transitive, with the subject being one 'co-X-er', and the object being another. Examples of this type of transitive 'shared event' verb are given below.

Root	Stem I	Stem III
√skn	sakana 'to reside' $_{int}$	saakana 'to live with' $_{trns}$
√ʃrb	ʃariba 'to drink' $_{trns}$	ʃaaraba 'to drink with' $_{trns}$
√ʔkl	ʔakala 'to eat' $_{trns}$	aakala 'to eat with' $_{trns}$
√syr	saara 'to walk' $_{int}$	saayara 'to walk with' $_{trns}$
√ʤls	ʤalasa 'to sit' $_{int}$	ʤaalasa 'to sit with' $_{trns}$
√ḍdʒʕ	ḍadʒaʕa 'to lay down' $_{int}$	ḍaadʒaʕa 'to have sex with' $_{trns}$

Table 74: Stem III shared event verbs.

In each of these examples, the root produces two identical relations which may be paraphrased as ‘X with’. A shared event of this type may be represented as shown.

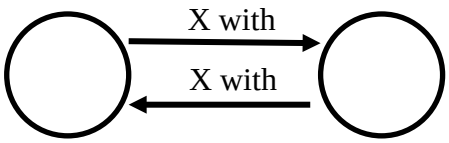

Figure 12: Representation of a shared event.

When a root that lexicalizes a one-participant action, like those in the table above, plugs into stem III, the combination of the root with the dual marker /aa/ produces the concept of ‘co-Xing’. That is, the subject plays one role in a dual concept such as cohabiting, co-eating, co-drinking, co-walking, co-sitting, and co-laying (which as seen above has a sexual meaning). However, the resulting verb is only concerned with the fact that the subject is a ‘co-Xer’. That is, each participant Xes, and every participant is Xed with, but one is priviledged in the discourse.

This type of sharing is not limited to roots that lexicalize events. The table below shows examples of stem III verbs formed from roots that lexicalize things.

Root	Stem I	Noun	Stem III
√ʕṣr	ʕaṣara ‘to squeeze’ trns	ʕaṣr ‘age; era’	ʕaaṣara ‘to be contemporary of’ trns
√ʤns	---	ʤins ‘kind;type’	ʤaanasa ‘to be of the same type as’ trns

Table 75: Stem III shared thing verbs.

This type of data clearly illustrates that stem III is not created by the modification of some fixed root meaning that is equatable with a stem I verb. Rather, it is an independent structure in which a root yields two relations. The stem III verb ʕaaṣara encodes two participants sharing an age. The root ʕaṣr plugs into this stem and contributes some aspect of its potential meaning to the structure, creating the notion *contemporary*, which is formulated from two conceptual arguments sharing an age or an era, as shown.

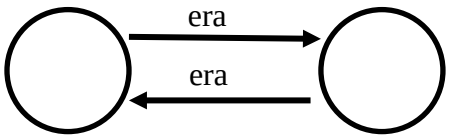

Figure 13: Sharing an era (to be contemporary of).

Thus verbs describing shared events (or things) are created when a root combines with a dual marker. The dual marker signifies the presence of two relations and the root determines their character by contributing some aspect of its meaning. In the next section I discuss verbs of mutual contact, which like the verbs discussed in this section, construe a mutual concept but privilege the role of the subject within such a concept.

9.3.2 Contact verbs

The notion of contact appears to be an inherently mutual one, in the sense that it is a state which holds of two entities, each in contact with the other. Indeed, the English word *contact* itself consists of the morpheme *con* which contributes duality, and *tact*, which is related to touching. How this state is brought about need not be mutual however, as one party may initiate it. A number of roots produce stem III verbs in which the subject initiates mutual contact. For example, the root √ʕnq yields transitive stem III *ʕaanaqa* 'to hug', which I have already demonstrated is not reciprocal. The root does not yield a stem I verb, but it does yield the nominal *ʔunuq* 'neck'. When the root combines with the dual marker /aa/ in stem III, the resulting verb describes an event in which mutual contact is initiated by one party. In fact, the meaning of this verb is not restricted to that construed by English *hug*, as it may be used to describe different types of contact, such as that between the sea and the shore, for example. Again in this context, it is the sea that initiates the contact, although it remains the case that contact itself holds equally between two participants. Thus again here, the dual marker signifies the presence of two relations, and this provides an underlying structure which may produce verbs of sharing, cooperation, contact, opposition and so on. It is the root which determines which of these possibilities will materialize in a given verb.

A similar example, also involving contact, comes from the root √ṣfḥ, which yields transitive stem III *ṣaafaḥa* ‘to shake the hand of’ (I will show in the next chapter how this becomes a true reciprocal in stem VI). The root seems to encode a notion of *surface*.

Root	**Stem I**	**Adjective/Noun**
√ṣfḥ	ṣafaḥa ‘to beat into a plate’ $_{trns}$	ṣafḥa ‘page; leaf; sheet’ ṣafiiḥ ‘broad surface; tin sheet’ ṣafiiḥa ‘sheet of metal’

Table 76: Words formed from √ṣfḥ.

The root plugs into stem III, where the dual marker specifies two relations. Due to the nature of the root, these come to be relations which between them constitute mutual contact (surface to surface perhaps, or the sharing of a surface). The resulting verb *ṣaafaḥa* ‘to shake the hand of’ conveys the bringing out of this mutual contact by the subject. Other meanings are possible, all of which involve the bringing out of contact between the subject and the object. The verb may mean *to shake the hand of; to touch; to lightly or gently graze; to glide over; pass over (said of wind, breath).* Stem III therefore both creates a mutual concept from a root which has no mutual meaning in any of its other manifestations (except stem VI), and construes the *initiation* of this concept, creating a verb which manages to be both reciprocal and asymmetrical at the same time: reciprocal because the participants involved are in a situation of mutual contact, each to the other; asymmetrical because only one of them is construed as bringing this situation about. Another type of verb which has this characteristic consists of verbs of interaction. These are discussed below.

9.3.3 Interaction verbs

Stem III verbs of interaction consist of two relations in which each party acts, and this action is oriented toward the other event participant, who represents a kind of target or goal. Examples of this kind of verb are given below.

Root	Stem I	Stem III
√ktb	kataba ‘to write’ trns	kaataba ‘to correspond with’ trns
√qwl	qaala ‘to say’ trns	qaawala ‘to converse with’ trns
√rhn	rahana ‘to mortgage’ trns	raahana ‘to bet’ trns
√lʕb	laʕiba ‘to play (a game)’ trns	laaʕaba ‘to play with’ trns
√ḥwr	ḥaara ‘to diminish’ int	ḥaawara ‘to dialogue with’ trns
√fṣl	faṣala ‘to separate’ trns	faaṣala ‘to haggle with’ trns

Table 77: Stem III verbs of interaction.

The type of relation construed in stem III is often clearly related to, but independent of, that lexicalized in stem I. The root contributes some aspect of its meaning to the stem III verb, but this is not simply a case of derivation from stem I. The root √ktb, for example, is related to the notion of writing, and contributes this meaning to stem III to create the concept of written interaction, or *corresponding*. Likewise √qwl encodes the notion of the speaking, and therefore creates a concept of spoken interaction, or *conversing*. With other roots however the relation between stem I stem III verbs formed from the same root is less clear. The root √rhn creates *rahana* ‘to mortgage’ in stem I, but *raahana* ‘to bet’ in stem III. The first verb construes an event lexicalized by the root. The second is created when the root enters a verbal environment housing a dual marker, which creates a verb whereby the subject is the Initiator of one relation (with the other party in the bet as the Endpoint), and the Endpoint of another (with this same party as the Initiator). The same is true for √fṣl, which creates stem I *faṣala* ‘to separate’ when verbalized, but stem III *faaṣala* ‘to haggle with’ when combined with a dual marker. In each case the resulting verb represents the event type shown below.

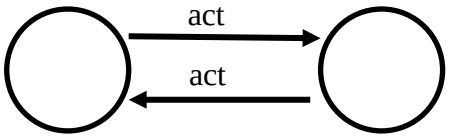

Figure 14: Representation of an event of interaction.

However, it is the role of the verbal subject in this event that is focused upon. It is for this reason that stem III *raahana* ‘to bet’ does not require the second participant to be overtly realized in the syntax. Like English *bet*, this verb may appear in sentences like *he bet that he would win*, where the second party in the bet remains implicit.

In rare cases this kind of interaction verb may be produced by a root that lexicalizes a thing. The root √ywm yields the noun *yawm* 'day', and the transitive stem III verb *yaawama* 'to employ by the day'. This verb encodes a type of agreement or transaction between the subject and the object. The combination of this root with the dual marker creates a special kind of transaction concept in which two parties agree, and the root contributes meaning so that the agreement is daily. Again here, the nature of the agreement is not equal as it is expressed in the verb, due to the unequal participant roles of subject and object.

9.3.4 Competition verbs

I have presented stem III verbs which may be classified as verbs of co-action, contact, and interaction. A fourth type consists of verbs of competition. This type of stem III verb construes the subject's role in the event type below.

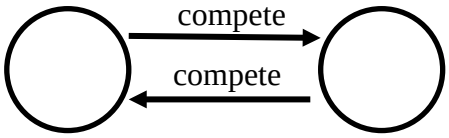

Figure 15: Representation of an event of competition.

The root specifies the exact nature of the competition. Examples of competition verbs are given in the table below.

Root	Expression	Stem III
√ʃrf	ʃaraf 'high rank'	ʃaarafa 'to vie for rank with' $_{trns}$
√zyd	zaada 'to increase' $_{int/trns}$	zaayada 'to vie with; bid against' $_{trns}$
√nfs	nafisa 'to envy' $_{trns}$	naafasa 'to compete with' $_{trns}$

Table 78: Stem III verbs of competition.

To summarize the argument so far, a root combines with stem III, and the dual marker signifies the presence of two relations. The subject of the verb represents the Initiator of one relation, and the Endpoint of the other. The root contributes some aspect of its abstract meaning, and the resulting verb describes a mutual concept brought about by one of the parties involved, which is represented by the subject of the verb. With most of the examples discussed so far, the

semantic role of the second party in these dual relations is filled by the object of the verb. However, this is not always the case. In the next section I discuss verbs encoding opposition, where a second party is often implicit.

9.3.5 Verbs of opposition

Stem III produces a great number of verbs in which the subject either resists, or acts and is met with opposition. Some examples are given below.

Root	Stem I	Stem III
√qwm	qaama ‘to stand up’ int	qaawama ‘to stand up to; to resist’ trns
√nhḍ	nahaḍa ‘to rise; get up’ int	naahaḍa ‘to resist; oppose’ trns
√dʒhd	dʒahada ‘to strive; try hard’ int	dʒaahada ‘to struggle; wage holy war’ int/trns
√ṣrʕ	ṣaraʕa ‘to fell; throw down’ trns	ṣaaraʕa ‘to wrestle; to struggle with’ int/trns
√qtl	qatala ‘to kill’ trns	qaatala ‘to fight’ trns
√ḥrb	ḥariba ‘to be furious’ int	ḥaaraba ‘to fight’ trns
√nzl	nazila ‘to descend’ int	naazala ‘to play against’ trns
√nqʃ	naqaʃa ‘to carve; engrave’ trns	naaqaʃa ‘to debate; discuss’ trns
√wdʒh	--	waajaha ‘to confront’ trns
√ʕrḍ	ʕaruḍa ‘to show; demonstrate’ trns	ʕaaraḍa ‘to oppose’ trns
√kfḥ	kafaḥa ‘to face frankly’ trns	kaafaḥa ‘to combat’ trns
√qṭʕ	qaṭaʕa ‘to cut’ trns	qaaṭaʕa ‘to interrupt’ trns

Table 79: Stem III verbs of opposition.

In chapter 4 on stem VIII I discussed a type of verb where the subject may be viewed as divided against itself, and I gave a brief overview of Talmy’s (1985, 1988, 2000) theory of **force dynamics,** which rests on the idea that language encodes patterns of opposing forces. This theory is relevant again here. Recall that a sentence like *he cannot wake up today* encodes two forces, one acting against the other. The subject of the sentence has a tendency towards waking up, but some unknown force works to prevent this occurring. There are two elements, each exerting force in mutual opposition. Note however that only one of these elements is realized in the sentence *he cannot wake up today*. There is therefore no inherent correspondence between force-exerting entities and syntactic subjects and objects. This does alter the fact that subject of *he cannot wake up today* exerts a force which is countered. The subject therefore may be viewed as being the Initiator of one relation (exerting force towards some unknown obstacle) and the Endpoint of another (being at the receiving end of a force which counters his own).

The stem III verbs in the table above all have subjects which both exert force and are met with an opposing force emanating from another event participant. However, while these verbs may encode an abstract notion of mutual opposition, this should not be understood as reciprocality, in which the subject and object stand in an *equal* relation and what the subject does to the object, the object also does to the subject. Thus with stem III *qaawama* 'to resist', the subject resists the object, but it is not the case that the object actively resists the subject. Likewise with stem III *ṣaaraʕa* 'to struggle', the subject struggles against something, but this thing does not necessarily struggle back against the subject. Both *qaatala* 'to fight' and *ḥaaraba* 'to fight' can take objects which do not fight back.

Although the objects of these verbs do not resist, struggle, or fight back however, it is clear that the verbs themselves do encode opposition. The stem III verb *qaawama* 'to resist' is different from stem I *qaama* 'to stand up' in that the subject opposes something in the stem III verb but not in stem I. Thus two participants stand in a state of mutual opposition in terms of force dynamics, even though they are not equal in terms of their participant roles, that is, they do not both actively initiate the opposition. The root plugs into stem III and is placed in a situation where it must create a concept consisting of two complementary arguments, each standing in a relation to the other. Some roots create shared event concepts like *cohabit*, others create interaction concepts like *correspond*, and other roots create mutual opposition concepts consisting of opposing forces.

Roots such as √qwm , which produces stem I qaama 'to stand up', and √ʤhd, which produces stem I ʤahada 'to exert oneself' lexicalize events in which one participant exerts force but is not met with opposition. When they combine with a dual marker, it is natural that two relations involving the exertion of force are created, and between them they create opposition. With *qaawama* 'to resist', the subject exerts a force against an opposing force emanating from the object, but only the subject is viewed as *actively* opposing. Thus the verb cannot be paraphrased as 'x resist y and y resist x' because the concept *resist* does not exist as a discrete meaning component ready to be expressed. Rather it is created when a root that seems to encode the exertion of effort combines with a dual marker.

The meaning of the verb ṣaaraʕa 'to struggle' results from the same interaction of root and stem. In stem III the root √ṣrʕ yields a verb in which one active participant exerts force and

this force is opposed by a second participant. Even though both participants are in a symmetrical state of opposition, it is inaccurate to paraphrase this as a mutual struggle, as only one of the participants is necessarily active. The second opposes the first only in terms of force dynamics (through its existence), and not necessarily through action.

With the above verbs the subject is in one way or another opposed, and the source of this opposition is realized as either an object argument or an indirect object. With other stem III verbs, the source of the opposing force is implicit. I discuss these next.

9.3.5.1 Opposition verbs with implicit participants

Jackendoff (1990) speculates that the English verb *to try* may have an implicit patient argument that acts as an Antagonist, standing between the subject and whatever it is that he or she is trying to do. The semantics of *to try* are such that the subject exerts effort against some unknown obstacle, which is either then overcome, or which wins out and prevents the subject from succeeding. I build on this notion of implicit arguments in this section, beginning with the Arabic verb for *to try* which, perhaps not coincidentally, is formed in stem III.

The stem III verb *ḥaawala* 'to try' is formed from the root √ḥwl, which also yields the noun *ḥawl* 'power; might'. This root, when combined with stem III, produces a verb in which the subject exerts force aimed at a goal, which is represented by the grammatical object of the verb. However, this force is countered by an unrealized Antagonist event participant which is in a state of mutual opposition with the active subject. The meaning *try* here comes from the interaction of root and stem. The root brings with it some notion of *power* or *force*, and this flavours the two relations that the dual marker creates. The force exerted by the subject is aimed towards the achievement of a goal, while the opposing force is aimed towards preventing the subject from achieving this same goal. There are a number of other verbs which behave in a similar fashion.

Root	Stem I	Stem III
√ḥwl	ḥaala 'to change' int 'to obstruct' obl	haawala 'to try; to attempt' trns
√dfʕ	dafaʕa 'to push'	daafaʕa 'to defend'
√ḥfð	ḥafiða 'to keep'	ḥaafaða 'to conserve'

Table 80: Stem III verbs with an implicit event participant.

The root √dfʕ produces *daafaʕa* ‘to defend’ in stem III, and this takes an indirect object, as shown.

(10) يدافع عنهم [36]

yudaafiʔ ʕan-hum
defend.3ms from-them
‘He defends them’

Here again, the subject both opposes and is opposed, in the sense that there is an implicit event participant with the potential to attack whatever is being defended. Thus there are again two opposing forces, one aimed at reaching a goal (by means of attack), and the other aimed and preventing the first from reaching this goal.

The type of event in which one participant both opposes and is opposed is also described by stem III *ḥaafaẓa* ‘to conserve’. The root √ḥfẓ produces stem I *ḥafiẓa* ‘to keep’, where the subject causes the object to remain in a given condition or place, but in in stem III *ḥaafaẓa* the subject stands in opposition to an implicit Agonist with a tendency to decay or negatively impact whatever is being conserved.

In this section I have discussed verbs consisting of two opposing relations which are construed as one event. Opposition is a type of symmetrical relation in which the opposing parties complement each other to create a complete event. In the next section I discuss verbs of cooperation, which I analyze in a similar way.

9.3.6 Verbs of cooperation

Stem III verbs of cooperation encode two event participants working together to achieve a common goal. A true *cooperate* meaning is not found in stem III however, as this would involve an equal role for each participant, that is, where each participant is equally involved in instigating the event. When a verb privileges one participant role over another, the verbal subject brings about a situation in which both subject and object work together to achieve something, and the meaning of the verb is *to help* or *to assist*.

[36] Munif (2008) p.587

Root	Stem I	Stem III
√ʕwn	--	ʕaawana ‘to assist’ trns
√sʕd	saʕida ‘to be happy’	saaʕada ‘to help’ trns
√ðhr	ðahara ‘to appear’	ðaahara ‘to help’ trns

Table 81: Stem III verbs of helping.

The analysis that I propose for verbs of resistance works equally well for verbs of cooperation. The root plugs into the stem and must produce a verb in which two parties are in an underlying equal state, but where one party is construed as bringing this state about. Thus two participant roles complement each other, creating the concept of cooperation, shown below.

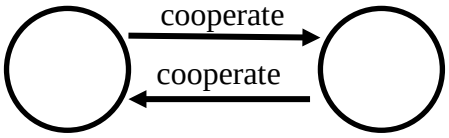

Figure 16: Representation of an event of cooperation.

But the resulting verb does not construe an equal relation whereby the subject and the object help each other. The reason for this because only one participant role is realized as the subject of the verb and is therefore viewed as bringing it about that both participants are in a state of cooperation, or complementarity, with regard to achieving a goal. This type of verb in which a symmetrical state underlies an apparently asymmetrical action verb is common in stem III. In the next section on stimulus-response verbs I discuss examples where the two relations signaled by the dual marker are not symmetrical, although they remain complementary.

9.3.7 Stimulus – response verbs

A small number of stem III verbs construe events of directed perception in which the subject directs his or her attention towards another participant, which then sends visual stimuli back to the first participant. Kemmer (1993) discusses an event type like this (although her analysis does not include Arabic), and models it with a diagram similar to that given below (p.128).

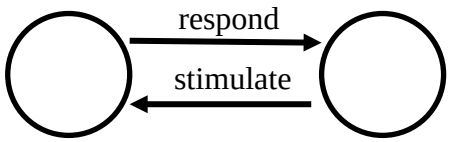

Figure 17: Representation of an stimulus-response event.

Some stem III verbs construe this type of event that are formed from roots that lexicalize events of perception in which the subject passively undergoes or receives a visual stimulus.

Root	Stem I	Stem III
√ʃhd	ʃahida ‘to witness’ trns	ʃaahada ‘to see; to watch’ trns
√lḥð	laḥaða ‘to notice’ trns	laaḥaẓa ‘to notice; to follow (news etc)’
√rqb	raqaba ‘to observe; monitor’ trns	raaqaba ‘to monitor’ trns

Table 82: Stem III stimulus-response verbs.

The stem I verbs *ʃahida* ‘to witness’, and *laḥaða* ‘to notice’ construe events over which are not under the control of the subject, that is, they are experienced rather than undertaken. In stem III the same roots yield perception verbs in which the subject perceives a stimulus (as in *ʃaahada* ‘see’; and *laaḥaða* ‘notice’), and then may go on actively engaging with it through directing his or her attention towards it as it continues to provide further visual cues (as in *ʃaahada* ‘to watch; and *laaḥaða* ‘to follow’). The root √rqb appears to already lexicalize this type of stimulus-response event in stem I, and creates a seemingly identical verb in stem III. Another example of a verb which the subject directs his or her attention towards a stimulus is produced from a root that lexicalizes a thing, as shown below.

Root	Noun	Stem III
√ʕyn	ʕayn ‘eye’	ʕaayana ‘to survey; inspect’ trns

Table 83: Stem III with √ʕyn.

In the next section I examine stem III verbs formed from roots that lexicalize symmetrical concepts.

9.3.8 Symmetrical state verbs

A number of Arabic roots encode concepts which are inherently symmetrical. A state like *separation* or *difference* holds between two entities. If either of these states holds between *x* and *y*, it also holds between *y* and *x*. When these symmetrical states are verbalized, one of these parties is often prioritized in the discourse as being the entity responsible for the existence of the state. In English it is reasonable to say that *a piece of rock separated from the mountain*, but not that *the mountain separated from a piece of rock*. In both cases however, an underlying symmetrical state of *separation* exists between the rock and the mountain (and between the mountain and the rock).

In Arabic, these symmetrical state roots usually produce asymmetric causative verbs in stem I. In stem VIII they merge with the reflexive /t/ affix, to yield an internally-oriented verb in which the same event participant fills both semantic roles contributed by the root (differing and differed from; separating and separated from; and so on). In stem III no causation is present, and the subject represents only one of the parties involved in the symmetrical state: the one responsible for bringing it about. Examples are given below.

Root	**Stem I**	**Stem VII or VIII**	**Stem III**
√ʤmʕ	ʤamaʕa 'to combine' $_{trns}$	ʔiʤtamaʕa 'to meet; to combine' $_{obl}$	ʤaamaʕa 'to have sex with' $_{trns}$
√wṣl	waṣala 'to connect' $_{trns}$	ʔittaṣala 'to connect with; to call' $_{obl}$	waaṣala 'to be connected to; to have sex with' $_{trns}$
√mzʤ	mazaʤa 'to blend' $_{trns}$	ʔimtazaʤa 'to blend' $_{obl}$	maazaʤa 'to blend with' $_{trns}$
√frq	faraqa 'to separate' $_{trns}$	ʔiftaraqa 'to separate' $_{obl}$	faaraqa 'to leave' $_{trns}$
√xlf	xalafa 'to succeed' $_{trns}$	ʔixtalafa 'to differ' $_{obl}$	xaalafa 'to be counter to; to violate' $_{trns}$

Table 84: Stem III symmetrical state verbs.

For all of the stem III verbs shown, a symmetrical state holds between the subject and the object whereby between them they form, *a combination*, *a connection*, *a separation* and so on. This state is brought about by the subject however, with the result that the verb itself construes what appears as an asymmetrical event. The stem III verb is not derived from the causative sense of the root that appears in stem I, but represents a second instance of verbalization. As seen above, many roots with the potential to yield symmetrical states of *union* produce verbs meaning

‘to have sex with’ in stem III. This concept is not inherent in the root, but is one possible interpretation of a structure which encodes one party initiating *union* with another.

The underlying symmetrical state inherent in the root also surfaces in a related nominal, which names the state. Examples are given below.

Root	Noun	Stem III
√ʤmʕ	ʤamʕ ‘combination’	ʤaamaʕa ‘to have sex with’ trns
√wṣl	waṣl ‘union; connection’	waaṣala ‘to be connected to; to have sex with’ trns
√mzʤ	mizaaʤ ‘blend’	maazaʤa ‘to blend with’ trns
√frq	farq ‘separation; difference’	faaraqa ‘to leave’ trns
√qṭʕ	qaṭiiʕa ‘estrangement’	qaaṭaʕa ‘to boycott’ trns
√ʕks	ʕaks ‘opposite’	ʕaakasa ‘to meet head on; to counteract’ trns
√xlf	xulf ‘variance; difference’	xaalafa ‘to violate’ trns

Table 85: Nouns naming symmetrical states and corresponding stem III verbs.

Each of the nouns in the table above represents a concept which is essentially a symmetrical relation holding between two entities. When these roots combine with stem III, these same symmetrical concepts surface. The resulting structure is interpreted as one in which the subject ‘does’ the state, and the other party which makes up the symmetrical concept has the state done to it. Further examples are given below.

Root	Expression of symmetry	Stem III
√swy	sawaaʔ ‘equality; sameness’	saawaa ‘to equal; to make equal’ trns
√nqḍ	naqiiḍ ‘antithesis’	naaqaḍa ‘to contradict’ trns
√wfq	wafq ‘accordance’	waafaqa ‘to agree with’ trns
√qbl	qibaala ‘opposite’	qaabala ‘to meet with; to interview’ trns
√ʕdl	ʕadiil ‘equal’	ʕaadala ‘to equal’ trns
√rfq	rifqa ‘company’	raafaqa ‘to accompany’ trns
√ṣdf	suḍfa ‘coincidence’	ṣaadafa ‘to encounter; to coincide with’ trns
√ʃrk	ʃarika ‘partnership’	ʃaaraka ‘to share with’ trns

Table 86: Stem III verbs in which the subject and object are in a symmetrical state.

In all cases, the dual marker of stem III signifies the presence of two relations, and the root contributes meaning about the nature of these relations. Thus the root√qṭʕ yields two meanings in this stem. Transitive stem III *qaaṭaʕa* may mean ‘to interrupt’ or ‘to boycott’. The

interrupt sense is related to (but not derived from) the concept realized in stem I *qaṭaʕa* 'to cut'. It arises when the two relations signified by the dual marker create the concept of mutual opposition. One participant has a tendency to continue, and another exerts a force to counter this tendency. In contrast the *boycott* sense is related to the nominal *qaṭiiʕa* 'estrangement', which names a symmetrical state wherein a gap separates two entities. The subject of the stem III verb represents one of these two entities, and brings about and maintains an estrangement between itself and the object.

9.4 SUMMARY

In this chapter I have argued that the long vowel /aa/ that is present in stem III is a marker of duality, and that it signals the presence of two relations construed as one event. A root combines with stem III and flavours two complementary relations to create verbs construing co-action, interaction, competition, opposition, cooperation, stimulus-response, or a symmetrical concept like union, separation, difference and so on. Only one of the two event participants is realized as the subject of the verb, which leads to a variety of verbs that may be based on reciprocal concepts, but which do not convey a reciprocal meaning because not all event participants have the same role. Thus what is common to stem III verbs encoding two relations is the subject represents the Initiator of one and the Endpoint of the other. When a root combines with the dual marker and a reflexive morpheme in stem VI, a true reciprocal is created, but also a number of other verbs that result from a root being placed in structure that specifies two relations, but also specifies that the same participant initiates and ends both. Stem VI is the topic of the next chapter.

Chapter 10: Stem VI

10.1 GOAL OF THE CHAPTER

In the previous chapter I argued that the long vowel /aa/ in stem III is a marker of duality, but that stem III verbs are not true reciprocals, because a distinction is maintained between subject and object. In this chapter I present an analysis of stem VI, which consists of both the long vowel /aa/ and the reflexive /t/ affix. My aim is to illustrate that the dual marker and the /t/ affix between them create a structure in which there are two relations, and where the same entity is both the Initiator and Endpoint of both of them. The nature of the root determines what type of verb is produced in this structure. I will not discuss stem VI 'feigning' verbs such as *tanaasaa* 'to pretend to forget' in this chapter, but note the possibility of a different historical source for this type of verb, as pointed out to me by Alexander Magidow (pc) based on his interpretation of the data in Al-Sweel (1987).

I begin the chapter by establishing the structure of the stem, and then illustrating how stem VI yields a true reciprocal. I then present a variant of this type of reciprocal which I term single-entity reciprocals, in which the subject is conceptualized as divided into elements. Following this I move on from standard reciprocality to illustrate how different roots yield verbs construing different types of event, and how all these are created within the same semantic structure. I present verbs that construe chaining events (the term is from Langendoen: 1978), where the elements of the subject form a chain of iterative action. I then examine verbs which construe shared events where each member of a collective subject carries out one action. I end the chapter with a summary of the points made in this chapter, and of the way in which morphemes that specify number determine the type of event that a root may come to describe.

10.2 THE STRUCTURE OF STEM VI

Stem VI incorporates both the reflexive marker /t/ and the dual marker /aa/. An example is given below with the root √qṭʕ.

(1) Stem VI pattern: $taC_1aaC_2aC_3a$
Example: √qṭʕ → $taC_1aaC_2aC_3a$ → taqaaṭaʕa 'to intersect'

In the previous chapter I established that stem III verbs construe events consisting of two relations, and represented this with the following diagram.

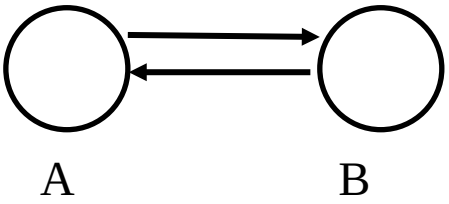

Figure 18: Representation of an event consisting of two relations.

The presence of the dual marker in stem VI still indicates that there are two relations, but the reflexive /t/ affix signals that the two participant roles involved are filled by the same entity, as shown below.

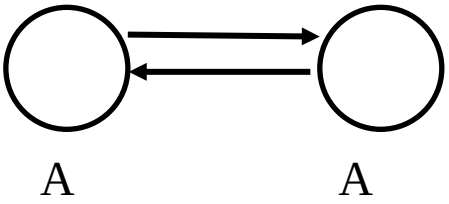

Figure 19: Elements of the subject stand in a relation to each other.

This is a diagram of an event type in which (an element of) the subject stands in an identical relation to (another element of) the subject. It is the presence of the reflexive /t/ affix that explains the difference between transitive stem III *qaaṭaʕa* 'to interrupt' and intransitive stem VI *taqaaṭaʕa* 'to intersect'. In the stem III verb the subject opposes and is opposed (in terms of force dynamics), but the verb itself is not reciprocal because it construes this opposition as an asymmetrical event that is instigated by the subject. When the same root is placed in a context where the subject initiates a symmetrical state and represents both parties in that state, the subject both *does something* and has something *done to it*. In this context the root yields a verb meaning *intersect.* In the section that follows I illustrate the types of verb that are created in stem VI.

10.3 STEM VI DATA

Reciprocality is just one possible result when a root combines with stem VI. I begin this section with reciprocal verbs, before moving on to some of the other verb types that the stem may produce.

10.3.1 True reciprocals

Stem VI yields a variety of true reciprocals which contrast with their stem III counterparts in that they necessarily mean 'do and be done to':

Root	Stem III	Stem VI
√qtl	qaatala 'to fight' trns	taqaatala 'to fight' int
√ḥrb	ḥaaraba 'to fight' trns	taḥaaraba 'to fight' int
√nqʃ	naaqaʃa 'to debate' trns	tanaaqaʃa 'to debate' int
√ṣrʕ	ṣaaraʕa 'to struggle' int/trns	taṣaaraʕa 'to struggle' int
√ʕwn	ʕaawana 'to help' trns	taʕaawana 'to cooperate' int
√ḥwr	ḥaawara 'to converse with' trns	taḥaawara 'to converse' int
√ʕnq	ʕaanaqa 'to hug' trns	taʕaanaqa 'to hug' int

Table 87: Stem VI true reciprocals.

The difference between the stem III and stem VI verbs in the above table is that whereas stem III encodes the fact that the subject is the Initiator of one relation and the Endpoint of another, it demotes the second participant (participant B in the diagram above), either presenting it as a grammatical object, or leaving it implicit. Stem VI reflexivizes the two roles, meaning that the subject represents both. For example, the subject of the verb *taqaatala* 'to fight' stands in an *opposition* relation directed toward a second party. That second party stands in an *opposition* relation directed toward the subject. The root specifies the details of this mutual opposition, making it *fight*. The subject therefore fights a second party and is fought by that second party. The participant role of that second party is however filled by the subject. This creates a situation whereby the subject fights and is fought and represents all parties involved. This is exactly what the verb construes. Each element of the subject fights and is fought by some other element of the subject.

However, this type of reciprocal may also appear with a prepositional phrase headed by *maʕa* 'with', as shown.

(2) الغرب يتحاور مع إيران رغم الخلافات بينهم [37]

al-ğarb yataḥaawar maʕa ʔiiraan rağm il-xilaafaat bayna-humaa
West. def dialogue.3ms with Iran despite differences.def between-them
'The West dialogues with Iran despite the differences between them'

Here, the second party is external to the subject. The meaning of the verb remains the same however. The structure of the verb is such that it specifies that *x dialogues* and *x is dialogued with.* In the absence of a *with* phrase, this is interpreted as elements of the subject talking to other elements of the subject. When a *with* phrase is introduced, the meaning may be paraphrased as *x dialogues and is dialogued with, with y.* Here, *x* remains both the Initiator and the Endpoint of the event, and is joined in these roles by *y,* so that both parties are equally involved in a reciprocal *dialogue*.

In the examples presented above, reflexivization creates a reciprocal verb where the subject is in a symmetrical relation with itself, and the subject is then interpreted as consisting of at least two elements, each of which initiates one relation and represents the endpoint of another. In most cases this means that the subject role must be filled by at least two event participants, but there are verbs where a single subject noun is interpreted as a mass, elements of which interact. I refer to these as single subject reciprocals.

10.3.1.1 Single subject reciprocals

The roots in the table below produce standard reciprocal verbs in stem VI. The absence of a corresponding stem III verb for two of these serves to illustrate the point that while stem VI may be derived from stem III in terms of structure, this does not mean that stem VI verbs are derived from stem III verbs. Rather the root enters directly into combination with each structure.

Root	Stem I	Stem III	Stem VI
√msk	masaka 'to grasp; grab' $_{trns\ *}$	---	tamaasaka 'to grasp each other' $_{int}$
√ḍrb	ḍaraba 'to hit; strike' $_{trns}$	ḍaaraba 'to vie with' $_{trns}$	taḍaaraba 'to hit each other' $_{int}$
√fʕl	faʕala 'to do; to act' $_{trns/int}$	---	tafaaʕala 'to interact' $_{int}$

Table 88: Further stem VI reciprocals.

[37] BYU: Shuruq — reference: A40545WslAmQLHmdslAmQD4-Apr-2010)

The same structure that produces the standard reciprocal meaning from these roots may also yield another meaning where the symmetrical relation created by the /aa/ affix is conceived of as holding between parts of a mass-like subject. Examples are given below.

Root	Stem VI	Standard reciprocal	Single subject reciprocal
√msk	tamaasaka	'to grasp each other'$_{int}$	'to hold together; be cohesive'$_{int}$
√ḍrb	taḍaaraba	'to hit each other'$_{int}$	'to be contradictory'$_{int}$
√fʕl	tafaaʕala	'to interact'$_{int}$	'to feed off itself; keep itself going'$_{int}$

Table 89: Stem VI single subject reciprocals.

These verbs have two interpretations depending on the type of subject argument they are supplied with. For example, the root √msk creates a symmetrical relation in which two participants are Initiators of relations directed towards each other. The subject fills the role of both participants. When the subject consists of two clearly distinguished entities, the resulting verb is interpreted as a standard reciprocal in which each party grabs the other. The same applies to √ḍrb and √fʕl, which create verbs of mutual hitting and interacting respectively. When these verbs are supplied with a mass-like subject however, the symmetrical relation is interpreted as obtaining internally. Examples are given below.

(3) ما دام المجتمع يتماسك[38]

maa daama al-muʤtamaʕ yatamaasak
as long as society.def hold-together.3msg
'As long as the society holds together'

[39]
تضاربت المعلومات بشأن الانفجار
taḍaarab-at al-maʕluumaat biʃaʔn il-infiʤaar
contradicted.3fsg informations.def in-matter explosion.def
'The information about the explosion was contradictory'

[38] http://www.ahl-alquran.com
[39] BYU: Hayat96 — reference: NEW1996:22499

المشكلة لا تزال تتفاعل يوما بعد آخر [40]

al-muʃkila laa tazaal tatafaaʕal yawman baʕada aaxar
problem.def not stop.3fsg get worse. fsg day after other

'The problem is getting worse day by day'

Here, a mass-like subject is conceptualized as consisting of elements, each of which represents the beginning and end of a relation. Each element of a society sticks to and is stuck to by another. Each piece of information contradicts and is contradicted by another. Aspects of a problem feed on and are fed by each other (and so the problem gets worse). Thus even within this structure which constrains the root, requiring it to yield a verb which is both symmetrical and reflexive, there is a degree of flexibility in the meaning that is produced. In the next section I discuss chaining events, where the dual role of the subject is found again with a slightly different format.

10.3.2 Chaining verbs

Some roots produce stem VI verbs describing what Langendoen (1978) calls chaining events. In this type of event, each participant performs an identical action, and these are organized into a series or sequence. Examples of stem VI chaining verbs are given below.

Root	Stem I	Stem VI
√wṣl	waṣala 'to connect' trns	tawaaṣala 'to communicate; to form an uninterrupted sequence' int
√nql	naqala 'to move' trns	tanaaqala 'to exchange; to pass down' trns
√wld	walada 'to give birth to' trns	tawaalada 'to breed or multiply' int
√wly	walaa 'to follow' trns	tawaalaa 'to follow in succession' int
√lḥq	laḥaqa 'to follow' trns	talaaḥaqa 'to follow in succession' int
√tlw	talaa 'to succeed' trns	tataalaa 'to follow in succession' int
√wrθ	waraθa 'to inherit' trns	tawaaraθa 'to pass down' trns

Table 90: Stem VI chaining verbs.

The sequential aspect of this type of verb comes from the root. Many of these roots encode the concept of succession. When they are placed in a structure in which the subject both initiates and terminates a relation, this creates a situation whereby the subject succeeds itself, or more accurately, elements of the subject succeed each other, and this is naturally interpreted as

[40] Munif (2008) p.350

happening in a sequence. Kemmer (1993) provides the following diagram to illustrate a chaining event (p.100).

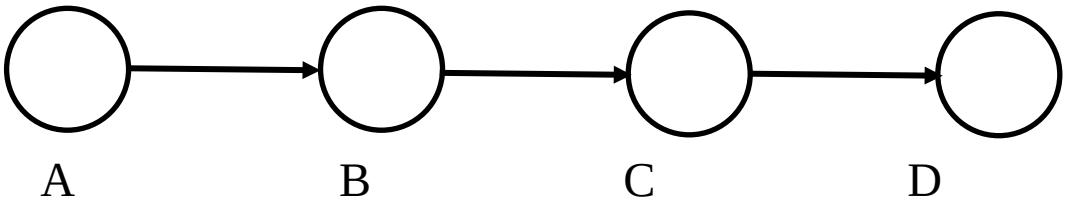

Figure 20: Kemmer's representation of a chaining event.

She proposes that a middle marker signals that all the participant roles in this chain are filled by the same entity, creating a verb in which the elements of the subject follow each other. However, I have already shown that the long vowel /aa/ that appears in both stem VI and stem III signals the presence of two relations, and I therefore reject the representation above. Rather, I assert that when a root that encodes notions of sequence or succession combines with both the reflexive /t/ affix and the dual marker, it comes to describe two relations that may be represented in a way consistent with the analysis that I have put forward for all other stem VI verbs. An example is shown below for the stem VI verb talaaḥaqa 'to follow in succession'.

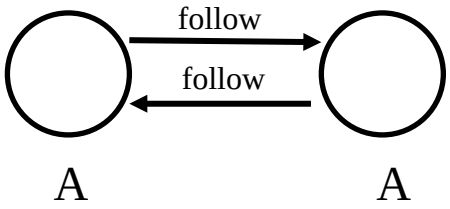

Figure 21: Stem VI *talaaḥaqa* 'to follow in succession'.

The combination of the root, the dual marker, and the reflexive affix therefore come to describe an event in which 'A follows A, and A follows A'. That is, an element of the subject follows another element, which follows another element and so on. Each element of the subject is Initiator of a *follow* relation that ends with another element of the subject. Thus when a root like √wld plugs into stem VI to produce intransitive *tawaalada* 'to breed or multiply', it yields a verb describing a situation in which the subject initiates a *beget* relation, and is at the receiving

end of an identical relation. The nature of the root encourages an interpretation in which elements of the subject beget each other in sequence, simply because begetting each other simultaneously is at odds with real world knowledge. The same applies for all the roots in the table above that have as part of their potential meaning the notion of *succession* or *order*.

10.3.3 Shared events

Some stem VI verbs describe events in which elements of a plural or mass-like subject carry out the same action either simultaneously, or simultaneously enough for all instances to be construed as one event.

Root	Stem I	Stem VI
√ṣyḥ	ṣaaha 'to shout' $_{int}$	taṣaayaḥa 'to shout in a group' $_{int}$
√rkḍ	rakaḍa 'to run' $_{int}$	taraakaḍa 'to run in a group' $_{int}$
√sqṭ	saqaṭa 'to fall' $_{int}$	tasaaqaṭa 'to fall in a group' $_{int}$

Table 91: Stem VI verbs describing collective events.

Following Lichtenberg (1985), Kemmer (1993) terms this kind of event in which action is carried out jointly by all event participants a *collective event*, and likens it to a reciprocal event because in both cases each participant plays two roles. However, whereas each participant in a reciprocal event plays both Initiator and Endpoint roles, she views the role of a participant in a collective event as consisting of two Initiator roles, in the sense that each participant is an agent or experiencer and also a 'companion' of all the other participants. No participant serves as endpoint of a relation in a collective event as she conceptualizes it (p.99):

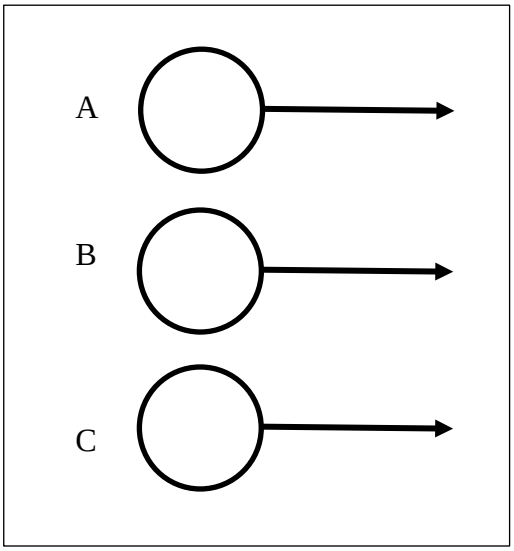

Figure 22: Kemmer's representation of a collective event.

If Kemmer's conceptualization of a collective event is correct it represents a problem for the analysis that I present here. The whole point is that the reflexive /t/ affix signifies a fused Initiator and Endpoint, so if no Endpoint role is present in a collective event, there is no way to justify its presence in this type of verb. Further, the long vowel /aa/ is supposed to mark the presence of two relations, but in a collective event as Kemmer represents it there are as many relations as there are participants, so it is unclear what the function of the long vowel /aa/ would be the stem VI verbs shown in the table above.

However, my representation of the type of event structure described by a stem VI verb automatically creates an Endpoint by placing the root in a context in which it yields two identical relations. With roots that encode a patient role, this leads to two *do to* relations. The subject initiates one and is the Endpoint of another. The subject therefore *does to* and is *done to.* With roots that encode no such patient role, the same structure leads to an interpretation in which the subject participates in a shared event, and this may be paraphrased as *act with* and *be acted with*. The subject initiates an *act with* relation and is also the Endpoint of an *act with* relation. Thus the root √rkḍ, for example, produces stem VI *taraakaḍa* 'to run in a group', which I represent as shown below.

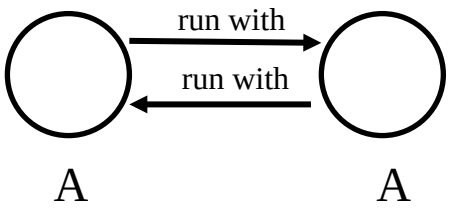

Figure 23: Stem VI *taraakaḍa* ‘to run in a group’.

This representation captures the fact that every element of the subject in the verb *taraakaḍa* ‘to run in a group’ both runs and is run with. Thus a unitary analysis is possible for each type of stem VI verb discussed. The different types of verb produced are the result of roots with different properties plugging into the same structure. Roots which encode patient arguments yield standard reciprocals. Those which encode notions of order or sequence produce chaining verbs. Roots that encode one-participant events produce verbs of collective action.

10.4 SUMMARY

In this chapter I have illustrated how the long vowel /aa/ and the /t/ affix work together to create a structural context in which a root produces verbs consisting of two relations, both of which start and end with the subject of the verb. This results in true reciprocal verbs where two or more entities carry out the same action on each other, but it also produces verbs describing chaining events, where the relations that link elements of the subject are conceptualized as occurring in succession. Stem VI also produces shared event verbs, where every element of the subject acts and is acted with.

In the last four chapters I have been concerned with the way in which the different morphemes that are present in the verbs stems of Arabic specify number, and I have focused on two different functions of number: plurality and duality. A root combines with a pluractional marker to create a verb that describes an event consisting of multiple phases. Likewise a root combines with a morpheme that marks dual relations, and in this context it creates a verb describing events characterized by concepts like interaction, competition, opposition, cooperation and so on. In both cases, I have shown that roots that do not lexicalize plural event phases or dual relations come to do so in combination with these morphemes. Thus a morpheme

sets up a structural context that determines the type of event a verb may describe, while the root contributes an aspect of its meaning to this structure.

Chapter 11: Conclusion

11. 1 GOAL OF THE CHAPTER

In this chapter I summarize the analysis developed in the dissertation, before considering the conclusions to be drawn and their implications for the development of a theory of verb meaning.

11.2 SUMMARY

I began with the observation that current linguistic theory recognizes two components of verb meaning: root and structure, and I noted that the ways in which these two components interact to create meaning below the word level is seldom explored and therefore poorly understood. This led to the formulation of the following research questions in chapter one:

(1) What is a root?
(2) What is its role in building verb meaning?

This dissertation represents an attempt to answer these questions in the context of Modern Standard Arabic. To do this, it has been necessary to aim big, covering a large number of Arabic verb stems in order to develop a coherent framework that specifically identifies their structural make-up and semantic function. The result is an analysis which, I hope, will stimulate debate, dissent, clarification, and most importantly progress towards an understanding of the Semitic root and stem, and towards a theory of verb meaning for language in general, about which I will have more to say in the next section.

I drew on current theory on verb meaning to develop my approach in chapter two. In formulating an answer to question (1), I adopted Borer's (2005) definition of a root as the pairing of a phonological index with a conceptual package, but I rejected her proposal that a root is entirely dependent on structure to determine whether it forms a verb describing a one-participant or two-participant event. I showed that this cannot be the case for Arabic, because some roots produce caused change-of-state verbs (where the subject affects the object) in stem I, while other roots produce only intransitive stem I verbs in which the subject undergoes a change-of-state. This latter type of root cannot produce a causative verb in stem I simply by adding a second NP.

Following Rappaport Hovav and Levin (1998) I concluded that roots have an ontological type, and that they lexicalize events, states, and things. A root may lexicalize a one-participant event, a two-participant event, or both. Likewise, it may lexicalize a state, a state and a thing, and so on. There are no inherently verbal, adjectival or nominal roots, but roots combine with functional heads which categorize them as verbs, adjectives, and nouns, after Marantz (1997). My conceptualization of a root is therefore an adaptation of that put forward by Arad (2005, 2007), who views a root as a potentiality with no fixed meaning, but which creates meaning in combination with morphemes. My definition of a root differs from hers in that a root lexicalizes an event, state or thing, and may express these simply by combining with a V, A or N head, while remaining free to yield some other aspect of its 'potentiality' when it combines with a verbal environment containing, for example, an Actor subject. Thus in my analysis a root has one or more primary realizations which are expressed in V, A, or N, but may draw on a different aspect of its meaning when it enters a verbal environment that provides what I refer to as 'structural help', in the form of different morphemes.

Determining the nature of these morphemes and of the 'structural help' that they provide is the first step in answering question (2) regarding the role of the root in building verb meaning. Root and morpheme create verb meaning between them, as argued by Doron (2003a, 2003b) for Hebrew. Specifically, my thesis here is that the verb stems of Arabic represent verbalizing environments which create meaning through reflexivization; through the provision of an Actor argument; and through specifying number (both plurality and duality). A root combines with a morpheme which determines the type of event the resulting verb will describe, and a root contributes an aspect of its meaning accordingly.

In part two of the dissertation I illustrated how reflexivization builds verb meaning. I argued that a reflexive morpheme represents a fused Initiator and Endpoint argument (after Haiman, 1983 and Kemmer, 1993), and that it provides these to a root, forcing it to produce a verb describing an internally-oriented event that terminates with the same event participant with which it begins. In analyzing stem VII in chapter three, I showed that the /n/ affix usually combines with roots that lexicalize externally caused events, but I also pointed out that this is not always the case, and argued that a reflexive morpheme does not reflexivize pre-existing participant roles lexicalized in the root, but rather brings two reflexivized roles with it to any verb it creates.

I expanded my analysis of the role that reflexivization plays in building verb meaning in chapter four, where I presented an analysis of two types of stem VIII verb, both of which are formed when a root combines with the reflexive /t/ affix. Like stem VII verbs, the first type of stem VIII verb construes a looping relation between fused Initiator and Endpoint arguments which does not encompass any other event participants. I suggested that both the /n/ affix and the /t/ affix create verbs construing such a relation in exactly the same way (by combining with a root), and that the difference between the resulting verbs is the result of different input. That is, roots which lexicalize a punctual change of state in the object combine with /n/, while the /t/ affix combines with a greater variety of roots. Stem VIII verbs construing this looping relation describe a variety of internally oriented events, including events of autonomous movement; changes of state; events in which a participant is divided against itself, and acts to restrain itself or force itself to do something; and events (or states) in which both parts of an entity are in a symmetrical relation, achieving an internal balance or evenness. Stem VIII also creates verbs in which a second participant is present, but this participant does not represent the Endpoint of a relation. Events described by such verbs include events where the subject receives something, or benefits from an action, or represents the terminus of a relation for some other reason.

The second way in which structure conditions verb meaning in Arabic is through the provision of an Actor argument (after Doron, 2003a/b). In chapter five I argued that stem IV provides a morpheme representing an Actor subject, and that roots combine with this morpheme to produce a variety of verbs describing externally oriented events, where the subject is interpreted as affecting the object, including events of caused transfer. Roots that lexicalize property states produce active verbs in this construction, where the subject is interpreted as acting in a certain way. Roots that lexicalize things produce weather verbs, or verbs of blooming, where the Actor produces whatever thing it is that the root contributes. Thus while the provision of an Actor argument allows a root to create new meaning, the type of meaning that a root contributes also determines whether an Actor causes, does, produces, goes, and so on.

When a root combines with both an Actor argument and a reflexive morpheme in stem X, the type of verb created describes an event in which an Actor brings about an event about, and represents the terminus of that event. Roots combine with this structure to produce verbs describing events in which the subject acts on another entity and benefits from that action, or functions as a recipient or goal. This structure also produces verbs describing mental events in

which the subject directs his or her attention towards the object, and formulates an impression of that object as a result.

In part IV of the dissertation I argued that the third way in which structure conditions verb meaning in Arabic is through the specification of number. I showed in chapter seven that stem II produces verbs with Actor subjects, and that a subset of these are pluractional verbs describing events that may be broken down into phases distributed across time or space. These pluractional verbs are primarily causative, and the onset of the effect brought about on the object represents a telos. The presence of a telos creates a countable concept, and this enables repetition. In chapter 8 I discussed the type of verb created when a root combines with both a pluractional marker and a reflexive morpheme. The types of verb created in this structure include verbs of internal decomposition, multidimensional extension, change by degree, including incremental mental states, and activity verbs formed from roots that lexicalize states. Thus the morphemes between them specify that the event type is an internally oriented event consisting of multiple phases, and the root contributes meaning within these parameters.

I argued in chapters 9 and 10 that number is also specified in stems III and VI, by the long vowel /aa/, which functions as a marker of duality. In chapter 9 I presented an analysis of stem III where the long vowel signals the presence of two relations that are construed as one event. The combination of a root with this stem creates a verb the subject of which is the Initiator of one relation and the Endpoint of another. Again here then, the morpheme /aa/ specifies a dual event, and the root contributes meaning to produce a verb describing interaction, competition, opposition, cooperation and so on. In chapter 10 I showed that when a root combines with both a marker of duality and a reflexive marker in stem VI, the morphemes create a context in which there are two relations, and the same entity represents the Initiator and Endpoint of each. Within this structural context the root determines whether the verb will be reciprocal, or whether it will describe a chaining event or a shared event. The results of this analysis are summarized in table form below.

Stem	Pattern	Function	Examples
Stem II	$C_1aC_2C_2aC_3$	Pluractional with Actor subject	I: ʤamaʕa 'to collect'$_{trns}$ II: ʤammaʕa 'to amass' $_{trns}$
		Actor subject	I: qadima 'to precede; go before' $_{int}$ II: qaddama 'to put forward' $_{trns}$
			I: ṣadaqa 'to be truthful'$_{int}$ II: ṣaddaqa 'to believe' $_{trns}$ (ascribe truth to)
			I: ʕaqama 'to be sterile' $_{int}$ II: ʕaqqama 'to sterilize' $_{trns}$
Stem III	$C_1aaC_2aC_3$	Dual verb encoding two relations	I: qatala 'to kill' $_{trns}$ III: qaatala 'to try to kill; to fight' $_{trns}$
			I: kataba 'to write' $_{int/trns}$ III: kaataba 'to correspond with' $_{trns}$
Stem IV	ʔaC$_1$C$_2$aC$_3$	Actor subject that causes, acts, produces, goes, etc, depending on the meaning contributed by the root.	I: fariḥa 'to be happy' $_{int}$ IV: ʔafraḥa 'to gladden' $_{trns}$
			I: nazila 'to go down' $_{int}$ IV: ʔanzala 'to bring down' $_{trns}$
			waraqa 'leaf' IV: ʔawraqa 'to burst into leaf' $_{int}$
Stem V	taC$_1$aC$_2$C$_2$aC$_3$	Action which begins and ends with the subject of the verb. May be pluractional.	II: ʕallama 'to teach' $_{trns}$ V: taʕallama 'to learn' $_{trns}$
			II: ʤammaʕa 'to amass' $_{trns}$ V: taʤammaʕa 'to come together in masses' $_{int}$

Table 92: Summary of the semantic function of the Arabic verb stems.

Stem	Pattern	Function	Examples
Stem VI	taC$_1$aaC$_2$aC$_3$	Dual verb encoding two relations. All participant roles filled by the same entity, so each element of the subject 'X-es' and is 'X-ed with'.	III: waafaqa 'to agree to a proposition' $_{obl}$ VI: tawaafaqa 'to come to an agreement' $_{int/obl}$
			I: masaka 'to hold' $_{trns}$ VI: tamaasaka 'to cohere' $_{int}$
			I: saqaṭa 'to fall' $_{int}$ VI: tasaaqaṭa 'to fall continuously' $_{int}$ (said of rain; missles etc.)
		Possible different historical source for this type of verb.	I: ʤahila 'to be ignorant; not know' $_{int/trns}$ VI: taʤaahala 'to feign ignorance (of)' $_{int/trns}$
Stem VII	ʔinC$_1$aC$_2$aC$_3$	Verb describing internally oriented event which begins and ends with same event participant	I: ḥalla 'to undo; solve' $_{trns}$ VII: ʔinḥalla 'to be untied; dissolved' $_{int}$
			I: saḥaba 'to pull; withdraw' $_{trns}$ VII: ʔinsaḥaba 'to withdraw' $_{int}$
Stem VIII	ʔiC$_1$taC$_2$aC$_3$	Verb describing internally oriented event which begins and ends with same event participant. Differs from VII due to differences in meaning contributed by the root.	I: naqala 'to move' $_{trns}$ VIII: ʔintaqala 'to move' $_{int}$
			I: kasaba 'to gain' $_{trns}$ VIII: ʔiktasaba 'to gain' $_{trns}$
Stem X	ʔistaC$_1$C$_2$aC$_3$	Verb with Actor subject which represents the Initiator and Endpoint of a relation.	IV: ʔaʕadda 'to prepare' $_{trns}$ X: ʔistaʕadda 'to prepare' $_{trns}$
			IV: ʔaʕmala 'to cause to work' $_{trns}$ X: ʔistaʕmala 'to use' $_{trns}$
			I: ḥasuna 'to be good' $_{int}$ X: ʔistaḥsana 'to approve' $_{trns}$
			I: ǧafara 'to pardon' $_{trns}$ X: ʔistaǧfara 'to ask for pardon' $_{trns}$

Table 92, cont.

11.3 CONCLUSIONS AND DIRECTIONS FOR FURTHER RESEARCH

I began with two questions about root and its role in building verb meaning. The contribution of this dissertation has been to offer answers to these questions in the context of Arabic, aimed at informing a theory of verb meaning with application across all languages. With regard to the nature of the Arabic root, I have argued that roots lexicalize events, states and things, but that they remain free to produce new meaning with what I term 'structural help', in the form of morphemes. The types of morpheme present in the Arabic verbal system and the ways in which they condition verb meaning have been my primary focus, and I have shown that verb stems containing reflexive markers, Actor arguments, and markers of pluractionality and duality provide a structural environment with which the root interacts directly. The morphemes broadly determine the event type that a verb will describe, and a root contributes meaning within the limits set by the morphemes. This proposal represents a contribution to the field of Arabic and Semitic studies and to the study of word formation in linguistics. I deal with each of these fields in turn.

11.3.1. Implications for Arabic and Semitic studies

I noted in chapter 2 the existence of two schools of thought regarding the centrality of the Semitic root as a base for word formation. Restricting the discussion to verb formation, the view that the root is a semantic element from which verbs are derived directly is perhaps most recognizable in the work of (McCarthy 1981, 1985), McCarthy and Prince (1990a, 1990b), Holes (2004), and Ryding (2005), and the same is argued for Hebrew by Arad (2005, 2007) and Doron (2003a, 2003b). In contrast, the imperfective stem I verb is taken as a base for all other derived forms in the work of Ratcliffe (1997), Benmamoun (1999, 2003), and Heath (2003), amongst others.

The analysis presented in this dissertation takes the centrality of the root as given, dismissing the notion that verbs formed in stems II-X are derived from a fully vocalized stem I verb. An account which insists that stem I is a base for verb formation is obliged to explain the derivational process that forms stem II *ṭawwara* 'develop' from nothing (because this root does not produce a stem I verb) and the process that derives stem II *wazzaʕa* 'distribute' from stem I *wazaʕa* 'to restrain'. In contrast, if the root is viewed as combining directly with each stem to create meaning, the fact that stem II produces verbs consisting of plural event phases explains

why these roots create the meaning that they do in that stem. Likewise, the need to explain the process which derives stem III *naafasa* 'to compete with' from stem I *nafusa* 'to be precious' goes away. Instead, the root produces a different meaning in each structural environment. The research presented here therefore clearly supports the view that all Arabic verbs are root derived.

However, even when the centrality of the root is recognized, virtually all descriptions of the Arabic verb system restrict their analyses to labels such as *intensive*, *iterative*, *conative*, *middle*, *reflexive*, *causative* and so on, without considering the processes of word formation that give rise to each type of verb. To my knowledge this dissertation represents the first comprehensive analysis of the root and stem system of Arabic which focuses of the event types construed by the verbs formed in each stem. As such, it is my hope that the analysis presented here will function as a point of departure for future work on the Arabic verb which will serve to refine the hypotheses that I have put forward.

Two areas for future research stand out. The first concerns the development of the verb stems of Arabic. My primary concern in this dissertation has been to present an analysis of the verb system of Modern Standard Arabic as it stands today, and I have made no attempt to trace the historical development of the semantic function of each stem. Further research is needed to examine how the function of the stems may have changed over time. For example, Wright (1967) provides an example of the stem II verb *mawwata*, which he translates as 'to die en masse'. In modern Arabic this pluractional meaning is not present, and the verb is interpreted as causative, meaning 'to kill; cause to die'. Assuming that Wright's example is genuine, this suggests a shift in the function of stem II over time, moving from pluractional to active with some (undergoer) roots. A project involving data from older sources may shed light on the nature of this shift.

A need also exists for a comparative study between the verb stems of Modern Standard Arabic and those present in the spoken dialects. In Syrian Arabic, for example, the /n/ affix serves to create a passive, and may therefore affix to a variety of verbs which cannot be passivized in the same way in formal Arabic. Thus stem I *kataba* 'to write' is passivized by a change in vowel patterning in Modern Standard Arabic, to yield *kutiba* 'to be written', but in Syrian Arabic the /n/ affix serves this passivizing function, creating *ʔinkatab* 'to be written', a verb that does not exist in Modern Standard Arabic. The semantic function of stem VII has therefore progressed from anticausative to full passive, in line with Haspelmath's (1990) cross-

linguistic analysis in which he shows that passives regularly develop from anticausatives, which in turn develop from pronoun incorporation. In addition, the /t/ affix is often dropped in Syrian Arabic, so that stem II *waʔʔaf* 'to stop', for example, may be transitive or intransitive, whereas a contrast is maintained between transitive *waqqafa* 'to stop' and intransitive *tawaqqafa* 'to stop' in MSA . Further data are necessary to establish the type of verb that allows the /t/ to drop and to examine whether this is a continuing phenomenon.

11.3.2. Implications for a theory of verb meaning

The central contribution of this dissertation to a theory of verb meaning across language is that it highlights the need to separate the semantic structure which underlies a verb (like those proposed by Jackendoff, 1990) from the linguistic expression of that structure. The mechanisms available for the building of verb meaning differ across languages, while the concepts expressed remain relatively constant.

An Arabic verb consists of two components: a root which carries abstract meaning, and a set of bound morphemes which may be considered functional morphemes, or system morphemes, in that they make certain specifications about a verb (that it has an active subject for example, or contains two reflexivized arguments, consists of event phases, and so on). This contrasts with the verb system of English (including verbs developed from Latin), which creates verbs by merging morphemes, each of which contributes some semantic content. This contrast may be illustrated by comparing Arabic *ʔistaxraʤa* 'to extract' with its English/Latin counterpart *to extract*, and with English *to pull out*. The Arabic verb is created by merging the root √xrʤ (which yields stem I *xaraʤa* 'to exit') with stem X, which contains both an Actor subject and a reflexive affix that refers to it. These system morphemes alone contribute no recognizable semantic content however, but place the root in such a configuration that the meaning *to extract* is created. In contrast, the verb *to extract* is a combination of the morpheme *ex*, which contributes a direction (out or outward), and *tract*, which contributes a meaning equatable with *pull*. Thus, unlike in Arabic, both morphemes contribute recognizable semantic content to the verb, and I suppose, should be considered roots. The same applies to English *pull out*, with the difference being that while *extract* is the result of the combination of bound

morphemes, *pull out* is created by merging two morphemes which are also able to stand alone. Each linguistic expression represents the same semantic structure however:

(3) [x CAUSE y <out> to x]

The Arabic verb *ʔistaxraʤa* consists of the morpheme /s/, which specifies an Actor subject, and the /t/ affix, which represents a second argument that refers back to the subject. The root √xrʤ contributes the 'out' meaning of the verb, while these two morphemes contribute causation and direction (towards the subject). The only recognizable semantic content (out), comes from the root therefore, while causation and direction are the result of how these two morphemes are interpreted in combination with the root. The English verbs *extract* and *pull out* both consist of a morpheme that contributes the *out* meaning (*ex-* or *out* respectively), and another morpheme (*tract* or *pull*) that lexicalizes both causation and direction, in the sense that *pull* and *tract* both describe events in which one entity causes another to move towards it. Thus what is spelled out with the functional morphemes /s/ and /t/ in Arabic is lexicalized by the content morphemes *pull* and *tract* in English. All three expressions therefore convey the same concept at different levels of granularity.

Viewed in this light, the root and stem system of the Arabic verb exhibits the linguistic coding of aspects of verb meaning that are lexicalized at the root level in other languages, and it therefore represents a valuable resource for developing an understanding of the way in which we perceive, categorize, and construe the happenings that go on around us. Further cross-linguistic research is necessary to determine whether that which is true of Arabic is true everywhere. The fact that telic, singular, asymmetrical events like *cut* or *arrive* tend to be lexicalized at the root level in Arabic (and are expressed in stem I) suggests that this type of event is somehow perceived of as more basic than an event like *shatter*, which consists of multiple phases, or *refrain*, which involves a relation to the self, or *compete*, which is symmetrical and requires two participants, or *summon*, where one participant attempts to cause another to come to the first. If this is the case, we may reasonably expect that where a language marks verbs for different semantic functions, a verb describing a singular telic action will be more morphologically simple than verbs formed from the same root that describe events consisting of plural phases, dual relations, and so on. This is because a telic event is more basic in human cognition, and is

therefore more likely to be lexicalized by a root. Hypotheses like this may be easily tested through studies of the verbal systems of other languages, to see what types of event are most commonly lexicalized and what types are described by verbs that are built. This in turn will add to and refine the bank of semantic structures that I have suggested underlie the different Arabic verb stems, and which, I have suggested in this chapter, underlie all verbs in all languages, whether lexicalized at the root level, or represented through the combination of functional and/or content morphemes.

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